MATRIX™

Strong. Smart. Beautiful.

S3X-01 STEPPER
SERVICE MANUAL

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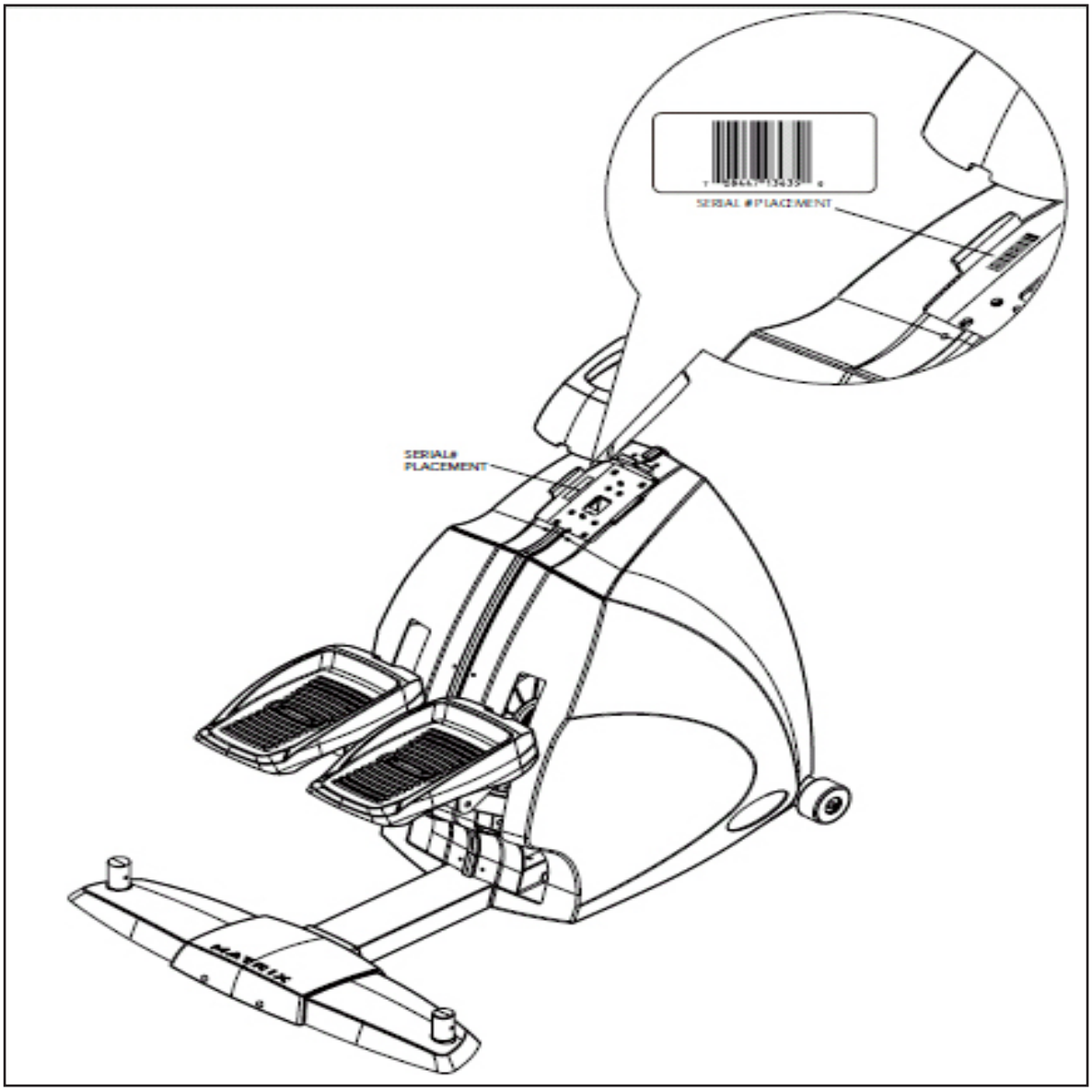
CHAPTER 1: SERIAL NUMBER LOCATION

1.1 SERIAL NUMBER LOCATION



A serial number plate is located below the bottom of the console mast beneath a rubber boot. There is also a serial number tag on the middle of the main frame pointed towards the floor.

CHAPTER 2: IMPORTANT SAFETY INSTRUCTIONS

2.1 BEFORE GETTING STARTED

The Matrix S3x-01 Stepper is intended for commercial use. To ensure your safety and protect the equipment, read all instructions before operating the stepper.

CHOOSING A SITE

The site should be well lit and well ventilated. Locate the Matrix S3x-01 Stepper on a structurally solid and flat surface. The Stepper should have a clearance of 20" on the back side from the wall or other equipment. This zone is to allow easy access to the Stepper and gives the user an easy exit path from the machine. If the site has a heavy plush carpet, to protect the carpeting and machinery, you should place a rigid plastic base under the unit.

Please do not place the Matrix S3x-01 Stepper in an area of high humidity, such as the vicinity of a steam room, indoor pool, or sauna. Exposure to intensive water vapor or chlorine could adversely affect the electronics, as well as other parts of the machine.

ELECTRICAL REQUIREMENTS

The Matrix S3x-01 Stepper is designed to be self contained and does not require a power supply to operate. However, the stepper can be AC powered with an optional power cord. This will power the console at all times and requires no minimum RPM for operation. These units can be daisy chained together using a Matrix daisy chain cord adapter, up to 4 units per dedicated 15 amp circuit. The unit does have an internal battery to initialize and display the workout readout or information while stepping to a stop. The unit's battery is recharged every time you exercise for a reasonable period of time.

The S3x-01 Stepper saves its battery charge by moving into a shutdown mode whenever STEP FASTER appears on the display. If the user does not maintain a step rate above 35 steps per minute, then a 30 second shutdown process begins. When the battery voltage is low, LOW BATTERY appears on the display if the unit is moving into the shutdown mode. The following situation is the time to recharge the battery:

* If no one has used the unit for an extended period of time, the battery may need recharging.

* The unit continues to function with a low battery, however, user and program information is lost once the user stops.

If the battery must be recharged, use the optional power adapter charging unit. The charger should be connected to the Stepper for a minimum of eight hours to ensure a thorough charge. After a completion of charge, the battery light turns from red into green (see illustration). If LOW BATTERY still appears on the display with a fully charged battery, the battery could be extinct. Please check with an authorized service technician for replacing the battery.

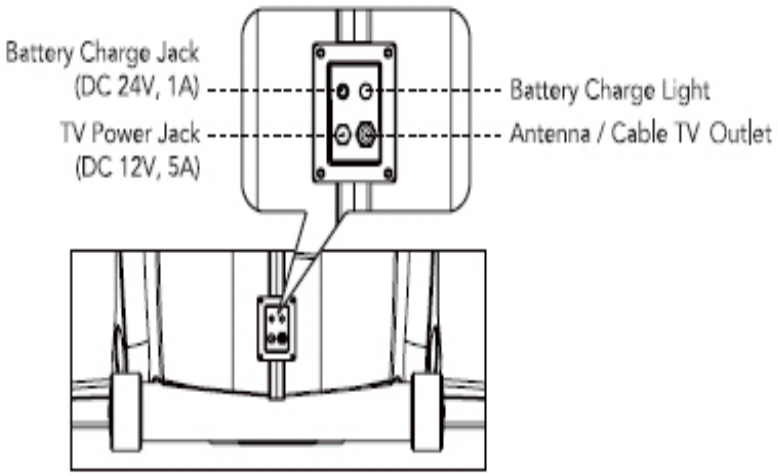
CAUTION

The battery stored inside the unit contains materials hazardous to the environment. Proper disposal of the battery is required by law.

GROUNDING INSTRUCTIONS:

The Matrix Stepper must be grounded. If it should malfunction or break down, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. The Stepper is equipped with a cord having an equipment grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances. If the user does not follow these grounding instructions, the user could void the Matrix limited warranty.

DANGER: Improper connection of the equipment grounding conductor can result in the risk of electric shock. Check with a qualified electrician if the user is in doubt as to whether the product is properly grounded. Do not modify the plug provided with the product if it will not fit the outlet, have a proper outlet installed by an electrician.



CHAPTER 2: IMPORTANT SAFETY INSTRUCTIONS

2.2 READ AND SAVE THESE INSTRUCTIONS

To ensure your safety and protect the equipment, read all instructions before operating the Matrix S3x-01 Stepper.

To ensure proper use of the Stepper, make sure that all users read this manual. Remind the users that before undertaking any fitness program, they should obtain complete physical examinations from their physicians. If, at any time while exercising, the user experiences dizziness, pain, or shortness of breath, nausea or feels faint, he or she must stop immediately.

**** This stepper is only to be used for its intended purpose described in this manual. Do not use attachments that have not been recommended by Matrix.***

**** Never drop or insert objects into any opening. Keep hands away from moving parts. If the item cannot be reached, contact a Matrix authorized dealer for assistance.***

**** Never operate the unit if it is damaged, not working properly, when it has been dropped, or has been dropped in water.***

**** Keep hands and feet clear at all times from moving parts to avoid injury.***

**** Do not use this product outdoors, near swimming pools or in areas of high humidity.***

**** Do not operate where aerosol (spray) products are being used or when oxygen is being administered.***

**** Do not use this product in bare feet. Do not wear shoes with heels, leather soles, cleats, or spikes while exercising.***

**** Do not remove the side covers. Service should only be done by an authorized service technician.***

**** Close supervision is necessary when used near children, invalids, or disabled people.***

**** When the stepper is in use, young children and pets should be kept at least 3 meters / 10 feet away.***

**** Assemble and operate the stepper on a solid, level surface.***

**** Never face backward while using the stepper.***

**** Use the stationary handlebars when mounting or dismounting the stepper.***

**** Do not wear clothing that might catch on any moving parts of this stepper.***

CAUTION! ***If you experience chest pains, nausea, dizziness, or shortness of breath, stop exercising immediately and consult your physician before continuing.***

CAUTION! ***Any changes or modifications to this equipment could void the product warranty.***

CHAPTER 3: PREVENTATIVE MAINTENANCE

3.1 RECOMMENDED CLEANING TIPS

Preventative maintenance and daily cleaning will prolong the life and look of your Matrix S3x-01 Stepper.

Please read and follow these tips.

* Position the equipment away from direct sunlight. The intense UV light can cause discoloration on plastics.
* Locate your equipment in an area with cool temperatures and low humidity.
* Clean with a soft 100% cotton cloth.
* Clean with soap and water or other non-ammonia based all purpose cleaners.
* Wipe the pedals, console, heart rate grips, and the handlebar clean after each use.
* Do not pour liquids directly onto your equipment. This can cause damage to the equipment and in some cases electrocution.
** Adjust leveling feet when equipment wobbles or rocks.
* Maintain a clean area around the equipment, free from dust and dirt.

3.2 CHECK FOR DAMAGED PARTS

DO NOT use any equipment that is damaged or has worn or broken parts. Use only replacement parts supplied by Matrix Fitness Systems.

MAINTAIN LABELS AND NAMEPLATES. Do not remove labels for any reason. They contain important information. If unreadable or missing, contact Matrix Fitness Systems for a replacement at 866-693-4863 or www.matrixfitness.com.

MAINTAIN ALL EQUIPMENT. Preventative maintenance is the key to smoothly operating equipment. Equipment needs to be inspected at regular intervals. Defective components must be kept out of use until they are repaired. Ensure that any person(s) making adjustments or performing maintenance or repair of any kind is qualified to do so. Matrix Fitness Systems will provide service and maintenance training at our corporate facility upon request or in the field if proper arrangements are made.

CHAPTER 3: PREVENTATIVE MAINTENANCE

3.3 CARE AND MAINTENANCE INSTRUCTIONS

In order to maximize life span, and minimize down time, all Matrix equipment requires regular cleaning, and maintenance items performed on a scheduled basis. This section contains detailed instructions on how to perform these items and the frequency of which they should be done. Some basic tools and supplies will be necessary to perform these tasks which include (but may not be limited to):

* Metric Allen wrenches
* #2 Phillips head screwdriver
* Adjustable wrench
* Torque wrench (capability to read foot lbs and inch lbs)
* Lint free cleaning cloths
* Teflon based spray lubricant such as "Super Lube" or other Matrix approved products.
* Mild water soluble detergent such as "Simple Green" or other Matrix approved products
* Vacuum cleaner with an extendable hose and crevasse tool attachment.

You may periodically see addendums to this document, as the Matrix Technical Support Team identifies items that require specific attention, the latest version will always be available on the Matrix web site at www.matrixfitness.com.

DAILY MAINTENANCE ITEMS

1) Look and listen for loose fasteners, unusual noises, and any other indications that the equipment may be in need of service.

2) Clean the stepper before and after each use, including:
a. Use a damp, soft cloth with water or mild liquid detergent to clean all exposed surfaces. DO NOT use ammonia, chlorine, or any acid based cleaners.
b. Keep the console display free of fingerprints and salt build up caused by sweat.

WEEKLY MAINTENANCE ITEMS

1) Frequently vacuum the floor beneath the unit to prevent the accumulation of dust and dirt which can affect the smooth operation of the unit.

2) Check the pedals and belts for damage.

3) Check the unit for a low battery charge, recharge if needed.

MONTHLY MAINTENANCE ITEMS

1) Inspect the console, pedals, handlebars, and shrouds for damage.

2) Adjust the leveling feet if equipment rocks or wobbles.

QUARTERLY MAINTENANCE ITEMS

1) Remove the front shrouds and check the belts for damage, alignment, and proper tension.

CHAPTER 4: CONSOLE OVERLAY AND WORKOUT DESCRIPTION

4.1 CONSOLE DESCRIPTION

PROGRAM KEYS: Simple program selection buttons make Matrix steppers easy to use. The stepper features eight programs.

START / QUICK START: One touch Quick Start and Start any time during preference selection.

UP / DOWN LEVEL: Easy information and level selection.

SELECT / SELECT SCREEN / RESET: This multi-function button enters information when setting up programming options, toggles information displayed and if held down for 5 seconds, resets the stepper to Start-up Mode.

4.2 WORKOUT SETUP STEPS - MANUAL

QUICK START - Press to immediately begin a workout. Workout, resistance level, and time will automatically go to default settings. Pressing QUICK START will not prompt user for age, weight, or level settings.

MANUAL - Manual allows the user to input more information while defining their own workout. Calorie expenditure will be more accurate when inputting information in Manual than by pressing QUICK START.

1) Start stepping, press the MANUAL key.
2) Select Level by using the UP or DOWN LEVEL keys and press SELECT.
3) Select Time by using the UP or DOWN LEVEL keys and press SELECT.
4) Select Weight by using the UP or DOWN LEVEL keys and press SELECT.
5) The display will read Starting 3, Starting 2, Starting 1, and then the program will begin.

4.3 WORKOUT SETUP STEPS - FAT BURN

FAT BURN - Fat burn is a level based program that is designed to help users burn fat through various resistance level changes.

1) Start stepping and press the FAT BURN key.
2) Select Level by using the UP or DOWN LEVEL keys and press SELECT.
3) Select Time by using the UP or DOWN LEVEL keys and press SELECT.
4) Select Weight by using the UP or DOWN LEVEL keys and press SELECT.
5) The display will read Starting 3, Starting 2, Starting 1, and then the program will begin.

4.4 WORKOUT SETUP STEPS - LEVEL BASED

ROLLING HILLS - The Rolling Hills program is a level based program that automatically adjusts the resistance level to simulate real terrain.

1) Start stepping and press the ROLLING HILLS key.
2) Select Level by using the UP or DOWN LEVEL keys and press SELECT.
3) Select Time by using the UP or DOWN LEVEL keys and press SELECT.
4) Select Weight by using the UP or DOWN LEVEL keys and press SELECT.
5) The display will read Starting 3, Starting 2, Starting 1, and then the program will begin.

INTERVAL TRAINING - The Interval Training program is a level based program that automatically adjusts the resistance of the machine from low to high intensity settings at regular intervals.

1) Start stepping and press the INTERVAL TRAINING key.
2) Select Level by using the UP or DOWN LEVEL keys and press SELECT.
3) Select Time by using the UP or DOWN LEVEL keys and press SELECT.
4) Select Weight by using the UP or DOWN LEVEL keys and press SELECT.
5) The display will read Starting 3, Starting 2, Starting 1, and then the program will begin.

RANDOM - Random is a level based workout that randomly adjusts the resistance of the machine.

1) Start stepping and press the key next to RANDOM key.
2) Select Level by using the UP or DOWN LEVEL keys and press SELECT.
3) Select Time by using the UP or DOWN LEVEL keys and press SELECT.
4) Select Weight by using the UP or DOWN LEVEL keys and press SELECT.
5) The display will read Starting 3, Starting 2, Starting 1, and then the program will begin.

4.5 WORKOUT SETUP STEPS - FITNESS TEST

FITNESS TEST -The Fitness Test program is to monitor the development of your cardiovascular system and measure your fitness level based on your average heart rate during specific test stages. When the 5 minute test is completed, the display provides a fitness score.

1) Start stepping and press the FITNESS TEST key.
2) Select Age by using the UP or DOWN arrow keys and press SELECT.
3) Select Gender by using the UP or DOWN arrow keys and press SELECT.
4) Select Weight by using the UP or DOWN arrow keys and press SELECT.
5) The display will read Starting 3, Starting 2, Starting 1, and then the program will begin.
6) Once the workout is complete, the display will read the results of the Fitness Test.

MEN'S OUTPUT TABLE FOR FITNESS TEST

AGE	EXCELLENT	GOOD	ABOVE AVERAGE	AVERAGE	BELOW AVERAGE	POOR	VERY POOR
18-25	<79	79-89	90-99	100-105	106-116	117-128	>128
26-35	<81	81-89	90-99	100-107	108-117	118-128	>128
36-45	<83	83-96	97-103	104-112	113-119	120-130	>130
46-55	<87	87-97	98-105	106-116	117-122	123-132	>132
56-65	<86	86-97	98-103	104-112	113-120	121-129	>129
65+	<88	88-96	97-103	104-113	114-120	121-130	>130

WOMEN'S OUTPUT TABLE FOR FITNESS TEST

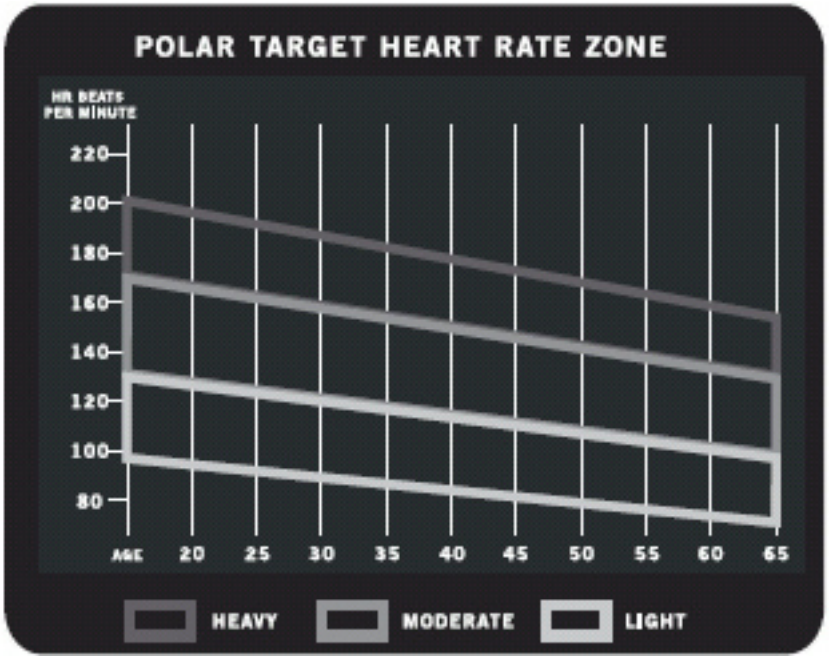
AGE	EXCELLENT	GOOD	ABOVE AVERAGE	AVERAGE	BELOW AVERAGE	POOR	VERY GOOD
18-25	<88	85-98	99-108	109-117	118-126	127-140	>140
26-35	<88	88-99	100-111	112-119	120-126	127-138	>138
36-45	<90	90-102	103-110	111-118	119-128	129-140	>140
46-55	<94	94-104	105-115	116-120	121-129	130-135	>135
56-65	<95	95-104	105-112	113-118	119-128	129-139	>139
65+	<90	90-102	103-115	116-122	123-128	129-134	>134

4.6 WORKOUT SETUP STEPS - TARGET HEART RATE

TARGET HEART RATE - The Matrix S3x-01 Stepper comes with standard digital contact heart rate sensors and are POLAR telemetry compatible. The heart rate control workout mode allows the user to program their desired heart rate zone, and the stepper will automatically adjust the level based upon the user's heart rate. The heart rate zone is calculated using the following equation: (220-Age)8%=target heart rate zone. The user must wear a POLAR telemetric strap or continually hold onto the contact heart rate grips for this workout.

Locate the metal sensors on the handlebars of the stepper. Notice that there are two separate pieces of metal on each grip. You must be making contact with both pieces of each grip to get an accurate heart rate reading. You can grab these sensors in any program to view your current heart rate.

1) Start stepping and press the HEART RATE key.
2) Select Age by using the UP or DOWN LEVEL keys and press SELECT.
3) Select Target HR Percentage by using the UP or DOWN LEVEL keys and press SELECT.
4) Select Time by using the UP or DOWN LEVEL keys and press SELECT.
5) Select Weight by using the UP or DOWN LEVEL keys and press SELECT.
6) The display will read Starting 3, Starting 2, Starting 1, and the program will begin.



4.7 WORKOUT SETUP STEPS - CONSTANT WATTS

CONSTANT WATTS - Constant Watts is a unique program that allows you to vary your cadence or RPM and the stepper's resistance level will adjust accordingly to your selected goal. The quicker you step, the less resistance for the goal selected.

1) Start stepping and press the CONSTANT WATTS key.
2) Select Watts by using the UP or DOWN LEVEL keys and press SELECT.
3) Select Time by using the UP or DOWN LEVEL keys and press SELECT.
4) Select Weight by using the UP or DOWN LEVEL keys and press SELECT.
5) The display will read Starting 3, Starting 2, Starting 1, and the program will begin.

CHAPTER 5: MANAGER / ENGINEERING / SERVICE MODES

5.1 MANAGER MODE OVERVIEW

1) To enter Manager Mode, press & hold the UP and DOWN level keys at the same time for 3-5 seconds until Manager Mode appears on the display.

2) To enter the Manager Mode, press SELECT once Manager Mode appears on the display.

3) To scroll between options in the Manager Mode, press the UP or DOWN level key.

4) Press SELECT to modify the program settings once displayed.

5) Press the UP or DOWN level key to change value.

6) Once the program setting is correct, press START to save.

7) Press and the START key twice to exit Manager Mode..

CUSTOM SETTINGS	DEFAULT	MINIMUM	MAXIMUM	DESCRIPTION
MAXIMUM TIME	60	5	95	Maximum workout duration.
DEFAULT TIME	60	5	95 (LIMITED TO MAX TIME SETTING)	Default start time in all programs.
DEFAULT LEVEL	L1	L1	L26	Default level used in all programs.
DEFAULT WEIGHT	150 LB / 68 KG	80 LB / 36 KG	400 LB / 182 KG	Default weight used in calorie calculations and HR programs.
SPEED IS MILE / KM	MILE	KM	MILE	Measure unit used for calorie calculations, distance, and speed.
MACHINE	ST	ST	ST	Should always be set for Stepper (ST)
CARDIO ON / OFF	ON	OFF	ON	Controls the Entertainment Port power in the back of the console.
ACCUMULATED DISTANCE	N/A	N/A	65,000 MILES / 104,000 KM	Total distance on the stepper, not editable.
ACCUMULATED TIME	N/A	N/A	65,000 HOURS	Total time on the stepper, not editable.
LANGUAGE	ENGLISH	N/A	N/A	Sets the language shown on the console.
SOFTWARE VERSION	N/A	N/A	N/A	Displays the current Software Version of the console.
ERROR LOG	N/A	N/A	N/A	Displays the error history on the console.
SHUTDOWN TIME	10 SEC	5 SEC	30 SEC	Determines the amount of time the console will display workout information after workout is complete before resetting the console.

5.2 ENGINEERING MODE OVERVIEW

1) Engineering mode is for factory settings only.

5.3 SERVICE MODE OVERVIEW

1) To enter Service Mode, press & hold the UP and DOWN level keys at the same time for 3-5 seconds until Manager Mode appears on the display.

2) Press the UP or DOWN level key until Service 1, 2, 3, or 4 appears on the display and press SELECT.

3) Press SELECT to modify the program settings once displayed.

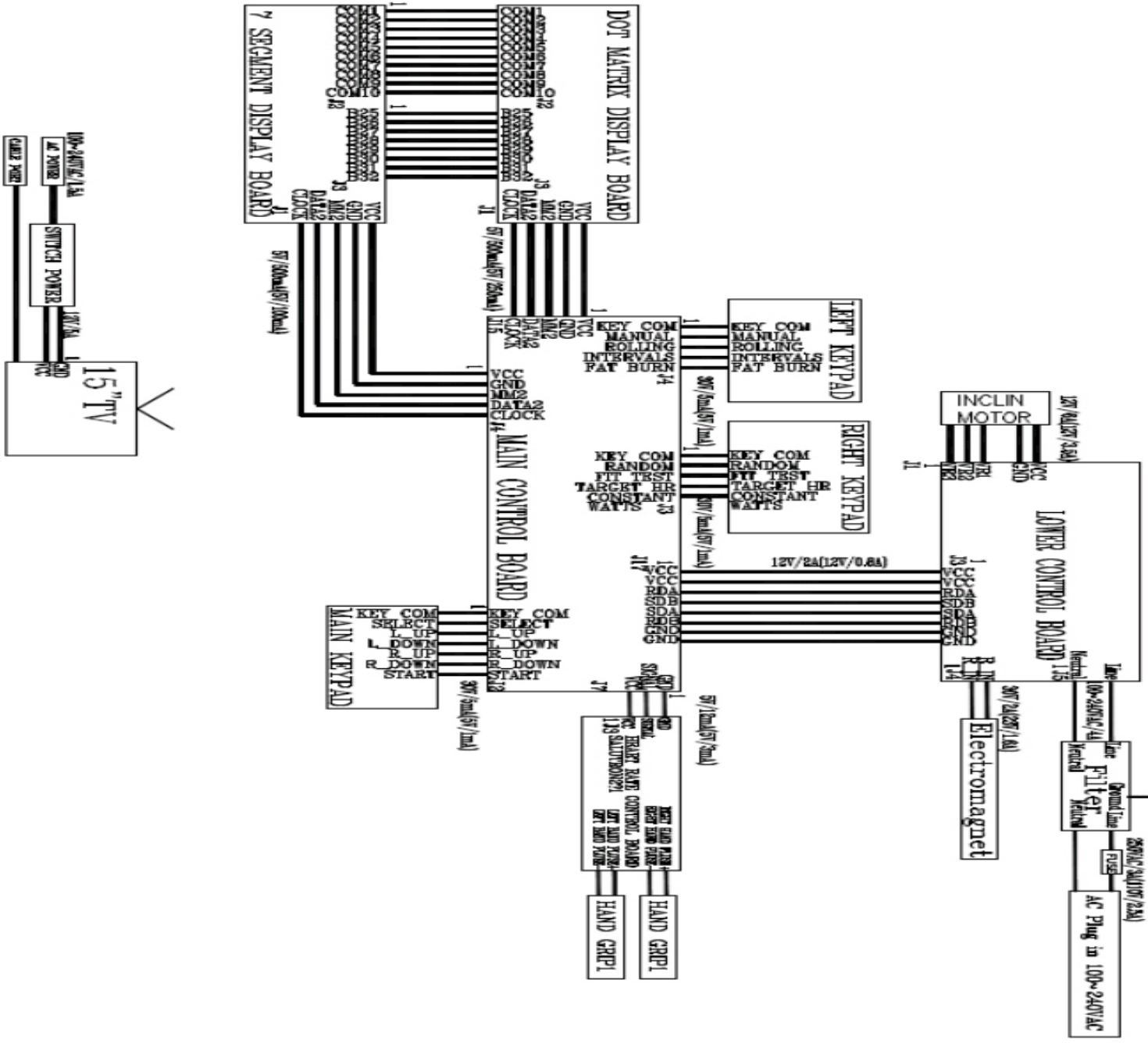
4) Press the UP or DOWN level key to change the value.

5) Once the program setting is correct, press START to save.

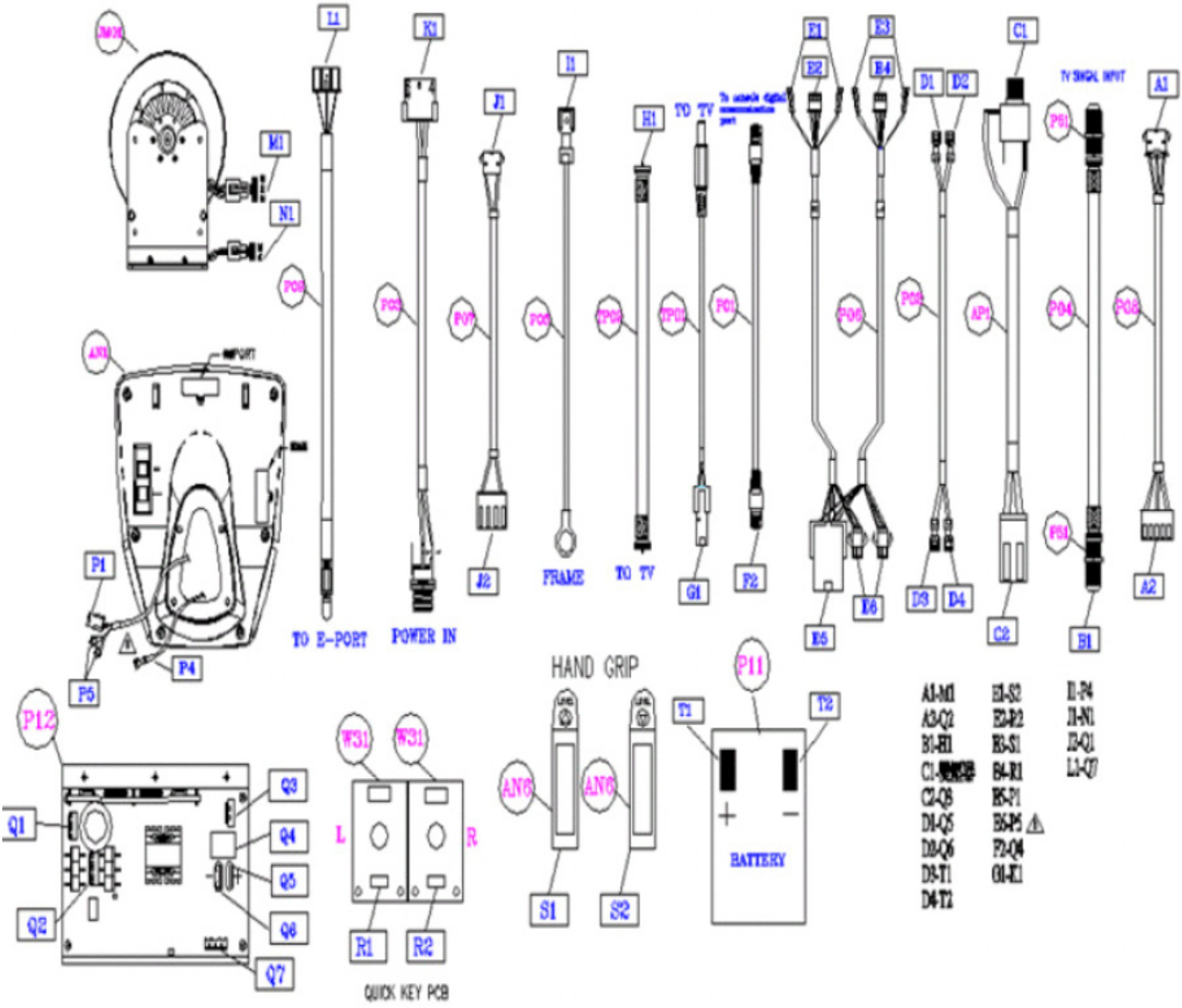
6) Press START twice to exit Service Mode..

CUSTOM SETTINGS	DESCRIPTION
Service 1	Display Test
Service 2	Test Mode - Shows RPM Reading
Service 3	Accumulated Distance / Accumulated Time
Service 4	Heart Rate Test

6.1 ELECTRICAL DIAGRAMS

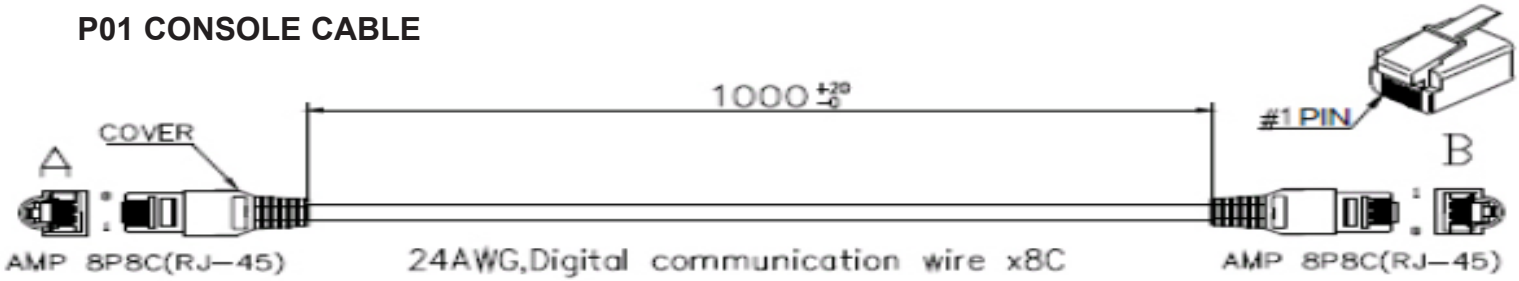


6.1 ELECTRICAL DIAGRAMS - CONTINUED



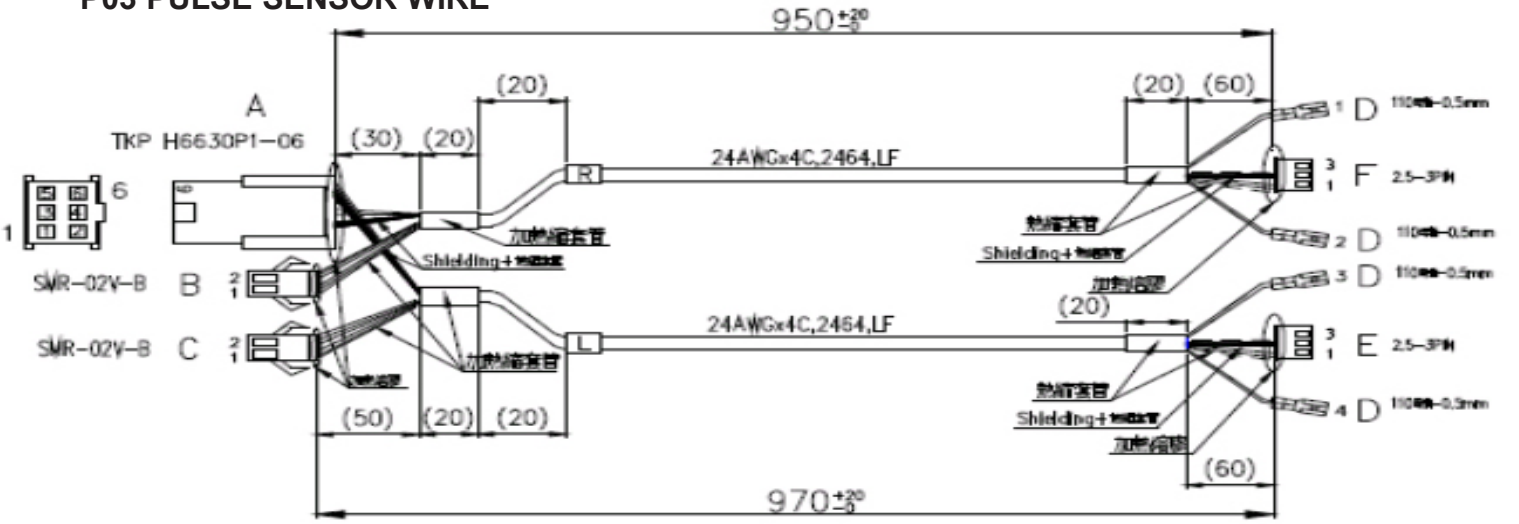
6.1 ELECTRICAL DIAGRAMS - CONTINUED

P01 CONSOLE CABLE



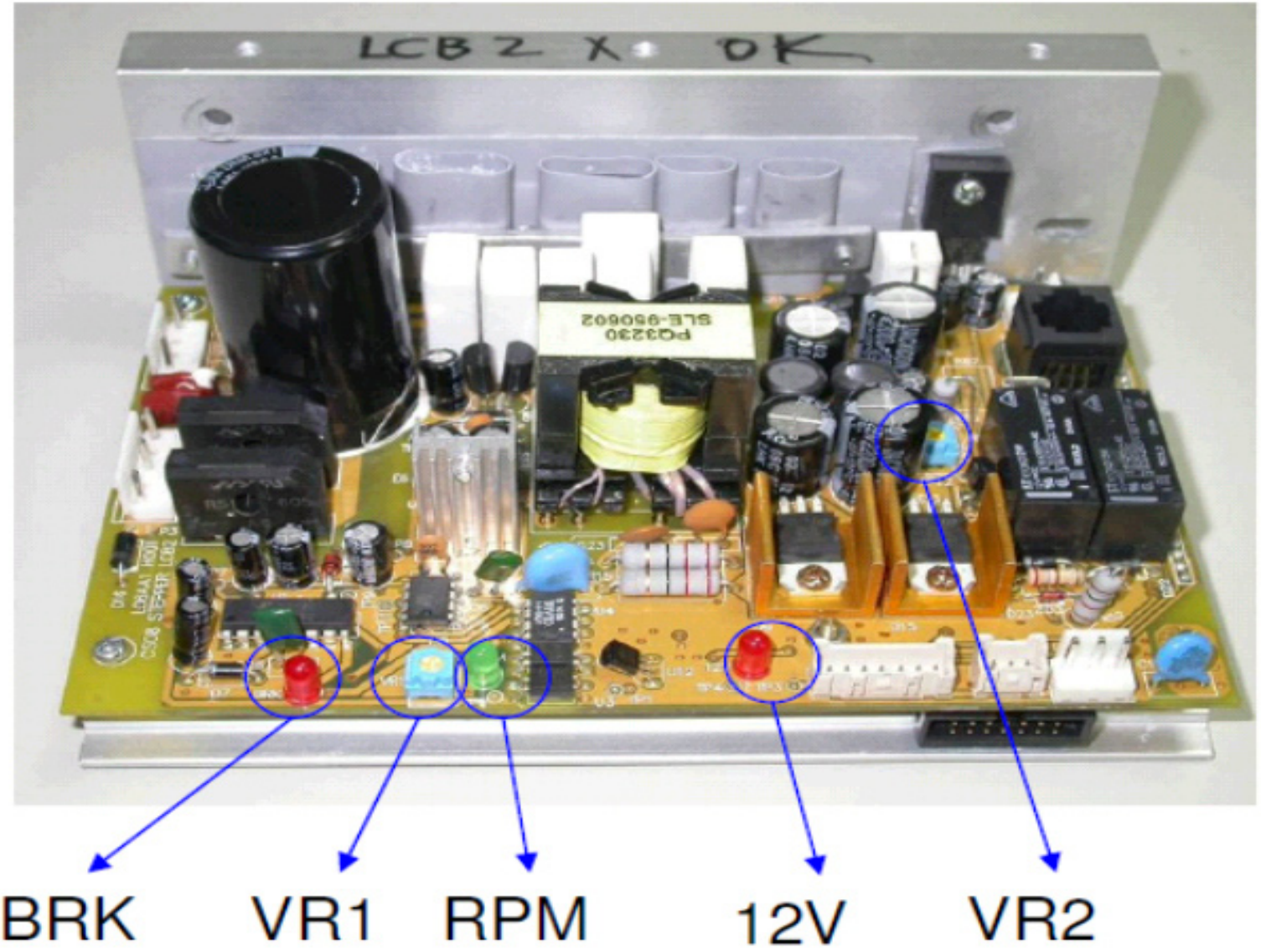
A.HOLE	B.HOLE	FUNCTION
1	1	+12V
2	2	+12V
3	3	RDA
4	4	SDB
5	5	SDA
6	6	SDB
7	7	GND
8	8	GND

P03 PULSE SENSOR WIRE



A.HOLE	B.HOLE	C.HOLE	D.HOLE	E.HOLE	F.HOLE	COLOR	FUNCTION
1					3		NC
2					2		GND(Shielding)
3					1		UP
	1		1			黑色	Right Hand Pulse+
	2		2			红色	Right Hand Pulse-
4				3			NC
5				2			GND(Shielding)
6				1			DOWN
		1	3			黑色	Left Hand Pulse+
		2	4			红色	Left Hand Pulse-

6.2 LCB LED INDICATORS



12V - Power Indicator Light.
BRK - Resistance Indicator Light.
RPM - Generator Indicator Light.
VR1 - Adjustable Resistance.
VR2 - Adjustable Battery Voltage to 12 V.

6.3 TROUBLESHOOTING - KEYPAD ISSUES

ALL OR SOME OF THE FUNCTION KEYS DO NOT RESPOND

POSSIBLE CAUSES:

1) The keypad connection ribbon cable has not been plugged in correctly.
2) The keypad is damaged.
3) The UCB is damaged.

SOLUTION:

1) Perform a keypad test in Service Mode:
   a. Press and hold both the UP and DOWN LEVEL keys until Manager Mode appears on the display.
   b. Use the UP and DOWN LEVEL keys to scroll to Service Mode 5 and press SELECT.
   c. Test the affected keypad. If the keypad works in the keypad test it may not be a functioning key in the program used for testing it.

2) Check the connections of the keypad at the UCB.
   a. Remove the console from the console mast.
   b. Remove the 6 screws holding the back of the console to the front (Figure A).
   c. Inspect the keypad ribbon cable connection at the UCB (Figure B).
   d. Even if the keypad ribbon cable appears to be connected correctly, unplug and re-seat the cable, then retest.

3) Replace the affected keypad.

4) Replace the UCB.

FIGURE A

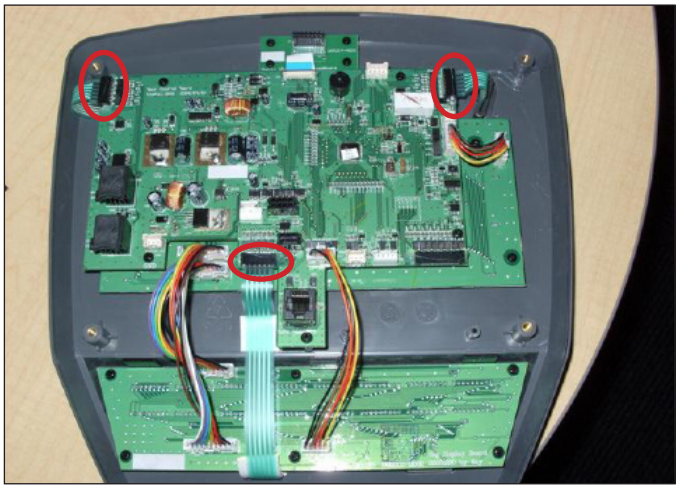


FIGURE B

6.4 TROUBLESHOOTING - CONSOLE ISSUES

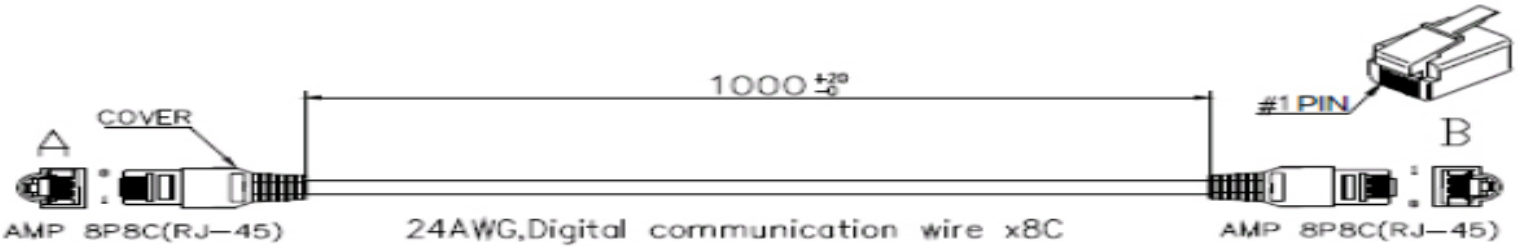
NO DISPLAY ON THE CONSOLE OR THE CONSOLE IS DIM

POSSIBLE CAUSES:

1) The console cable is damaged or not properly connected.
2) Poor connection to the terminals on the console.
3) The console is damaged.
4) The generator is damaged.
5) The Lower Control Board is damaged.

SOLUTION:

1) Unplug the console cable at the console and use a multi-meter to check if the voltage between pin 1 (Vcc) and pin 7 (Ground) of the console cable is greater than 12 Volts DC. If it is, replace the console.



A.HOLE	B.HOLE	FUNCTION
1	1	+12V
2	2	+12V
3	3	RDA
4	4	SDB
5	5	SDA
6	6	SDB
7	7	GND
8	8	GND

2) If no voltage is present in Step 1, check the console cable connection at the lower control board. Also check for any pinches or cuts in the console cable.

3) Check if the generator is outputting variable power:
   a. Insert the probes from a multi-meter into the black and red wires on the generator wire harness connector (Figure A).
   b. When stepping, the output voltage from the generator should vary depending on the RPM. The generator should output 120 VAC at 94 RPM.
   c. If the generator is not outputting variable power, replace the generator.
   d. If the generator is outputting variable power, replace the .... lower control board.

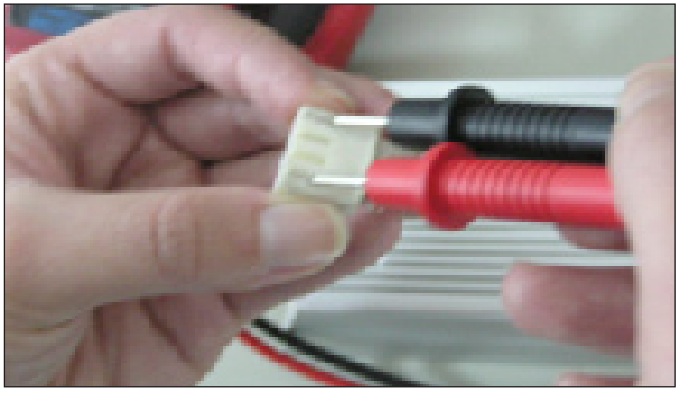


FIGURE A

NO RPM IS DISPLAYED DURING EXERCISE

POSSIBLE CAUSES:

1) The console cable is damaged or not properly connected.
2) The console is damaged.
3) The lower control board is damaged.

SOLUTION:

1) Remove the console and check to see if the console cable is connected properly.

2) Check to see if the console cable is pinched or cut, replace as needed.

3) Replace the console.

4) Replace the lower control board.

6.6 TROUBLESHOOTING - HEART RATE ISSUES

HEART RATE FUNCTION DOES NOT WORK OR IS READING INCORRECTLY

POSSIBLE CAUSES:

1) The chest strap being used is not making good contact with the user's chest.
2) The chest strap is at a low battery status.
3) The chest strap is damaged.
4) The HR grips are damaged.
5) The HR board is damaged.
6) The UCB is damaged.

SOLUTION:

1) Re-center the chest strap below the user's pectoral muscle (Figure A) and check again.

2) Replace the battery in the chest strap.

3) Replace the chest strap.

4) If there is no HR present, replace the HR grips.

5) If there is a HR present but it is much higher than normal, replace the HR board.

6) If replacing the HR grips and board does not resolve the issues, replace the console.

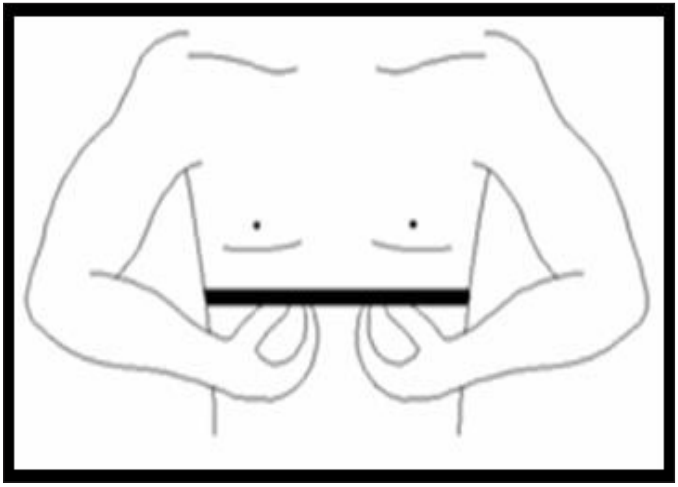


FIGURE A

CHAPTER 7: PART REPLACEMENT GUIDE

7.1 CONSOLE REPLACEMENT

1) Remove the 4 screws holding the console to the frame (Figure A).
2) Disconnect the console cable and HR connections from the defective console and remove the console (Figure B).
3) Reinstall the wire connections to the new console.
4) Carefully push the wires into the console mast until they are clear of the console / mast connection and attach the console to the mast using the 4 screws removed in Step 1.
5) Test the stepper for function as outlined in Section 7.22.

FIGURE A

FIGURE B

7.2 HEART RATE HANDLEBAR REPLACEMENT

1) Remove the console as outlined in Section 7.1.
2) Remove the 3 screws holding on the heart rate handlebar to the console mast being careful to support the handlebar (Figure A).
3) Carefully pull the wires from the console mast until the connectors are free and remove the defective handlebar (Figure B).
4) Reverse Steps 1-3 to install a new handlebar.
5) Test the stepper for function as outlined in Section 7.22.

FIGURE A

FIGURE B

7.3 HEART RATE GRIPS REPLACEMENT

1) Using a flat screwdriver, pry the silver metal heart rate plate on the back side of the HR grip away from the plastic of the HR grip (Figure A).
2) Remove the 3 screws holding the HR grip together (Figure B). NOTE: You may need to remove the console to give access to the HR grip screws.
3) Disconnect the HR grip wire and remove the metal plate (Figure C).
4) Disconnect the level button and remove the two halves of the HR grip (Figure D).
5) Reverse Steps 1-4 to install new HR grips.
6) Test the stepper for function as outlined in Section 7.22.

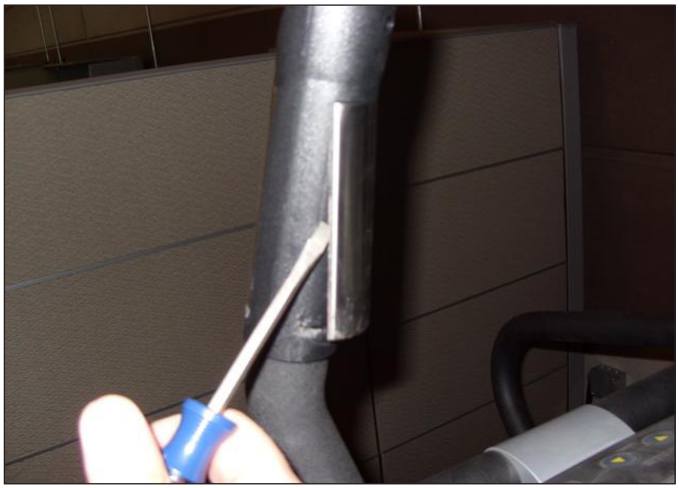


FIGURE A

FIGURE B

FIGURE C

FIGURE D

7.4 CUP HOLDER REPLACEMENT

1) Remove the 2 screws holding the cup holder to the console mast (Figure A).
2) Remove the cup holder (Figure B).
3) Reverse Steps 1-2 to install a new cup holder.

FIGURE A

FIGURE B

7.5 CONSOLE KEYPAD / OVERLAY REPLACEMENT

1) Remove the console as outlined in Section 7.1.
2) Remove the back cover of the console (Figure A).
3) Unplug and remove the faulty overlay (Figure B).
4) Clean the console area with alcohol to remove any left over adhesive (Figure C).
5) Remove the protective film over the display window of the overlay (Figure D).
6) Peel part of the protective film from the back of the overlay (Figure E).
7) Push the overlay ribbon cable through the hole in the console and plug it in (Figure F).
8) Match the overlay to the cutout on the console (Figure G).
9) Press down on the corners of the overlay to keep it in place, then remove the protective film (Figure H & I).
10) Once the overlay is in the correct position, press down on the overlay with a cloth to adhere it to the console plastic (Figure J).
11) Use the same procedure to replace any additional faulty overlays. NOTE: Overlays can not be reused.
12) Test the stepper for function as outlined in Section 7.22.

FIGURE A

FIGURE B

FIGURE C

FIGURE D

7.5 CONSOLE KEYPAD / OVERLAY REPLACEMENT - CONTINUED

FIGURE E

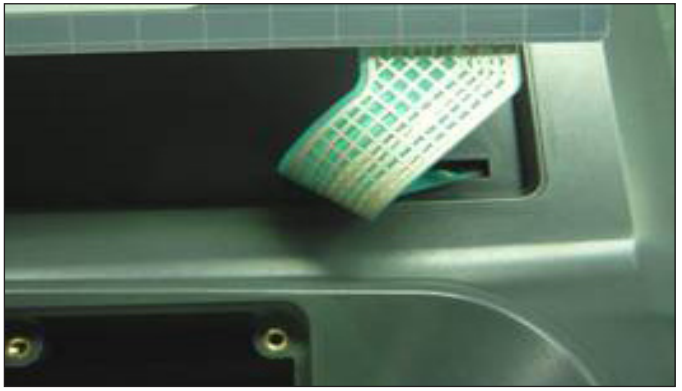


FIGURE F

FIGURE G

FIGURE H

FIGURE I

FIGURE J

7.6 CONSOLE MAST REMOVAL

1) Remove the console as outlined in Section 7.1.
2) Remove the HR handlebars as outlined in Section 7.2.
3) Remove the 2 screws holding the stationary handlebar junction to the console mast and pull the handlebars away from the console mast (Figure A).
4) Lift up the rubber boot at the bottom of the console mast (Figure B), and remove the 4 screws holding the console mast to the frame (Figure C).
5) Pull the wires out the bottom of the console mast and remove the mast.
6) Reverse Steps 1-5 to install a new console mast. NOTE: When installing a new console mast, be sure to pull the console wires up through the new mast prior to installing the 4 screws into the frame.
7) Test the stepper for function as outlined in Section 7.22.

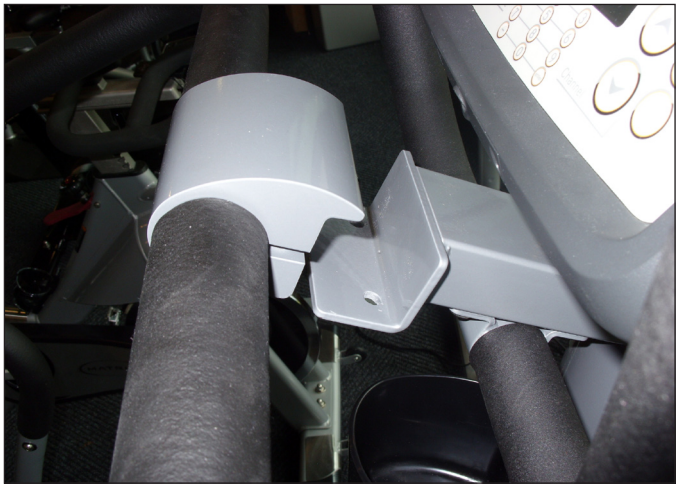


FIGURE A

FIGURE B

FIGURE C

7.7 UPPER STATIONARY HANDLEBAR REPLACEMENT

1) Remove the 2 screws holding the upper stationary handlebar junction to the console mast and lean it away from the console mast (Figure A).
2) Pull the defective upper stationary handlebar out of the upper stationary handlebar junction (Figure B).
3) Remove the 2 screws holding the bottom of the defective upper stationary handlebar to the lower stationary handlebar (Figure C).
4) This will allow you to remove the upper stationary handlebar (Figure D).
5) Reverse Steps 1-4 to install a new upper stationary handlebar. NOTE: Be sure to tighten the upper handlebar junction screws so that the handlebars are even.

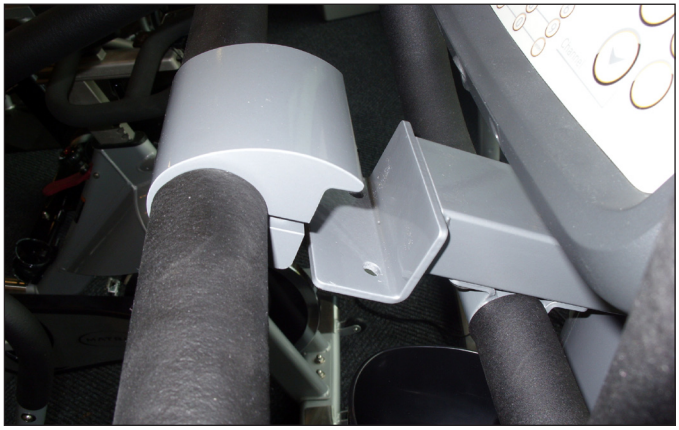


FIGURE A

FIGURE B

FIGURE C

FIGURE D

7.8 LOWER STATIONARY HANDLEBAR REPLACEMENT

1) Remove the upper stationary handlebar on the side with a defective lower stationary handlebar as outlined in Section 7.7.
2) Remove the 2 screws holding the lower stationary handlebar to the rear stabilizer (Figure A).
3) This will allow you to remove the lower stationary handlebar from the unit (Figure B).
4) Reverse Steps 1-3 to install a new lower stationary handlebar.

FIGURE A

FIGURE B

7.9 REAR STABILIZER COVER REPLACEMENT

1) Remove the 4 screws holding the rear stabilizer cover to the frame (Figure A).
2) Pull the rear stabilizer cover upward and off the unit (Figure B).
3) Reverse Steps 1-2 to install a new rear stabilizer cover.

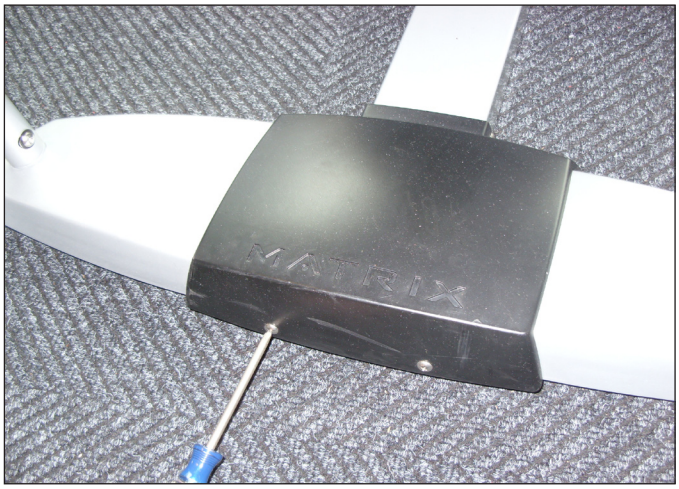


FIGURE A

FIGURE B

7.10 REAR STABILIZER REPLACEMENT

1) Remove the upper stationary handlebars as outlined in Section 7.7.
2) Remove the lower stationary handlebars as outlined in Section 7.8.
3) Remove the rear stabilizer cover as outlined in Section 7.9.
4) Remove the 4 screws holding the rear stabilizer to the frame and remove the stabilizer (Figure A).
5) Reverse Steps 1-4 to install a new rear stabilizer. NOTE: When installing a new stabilizer, the leveling feet may need to be transferred from the old stabilizer to the new one (Figure B).

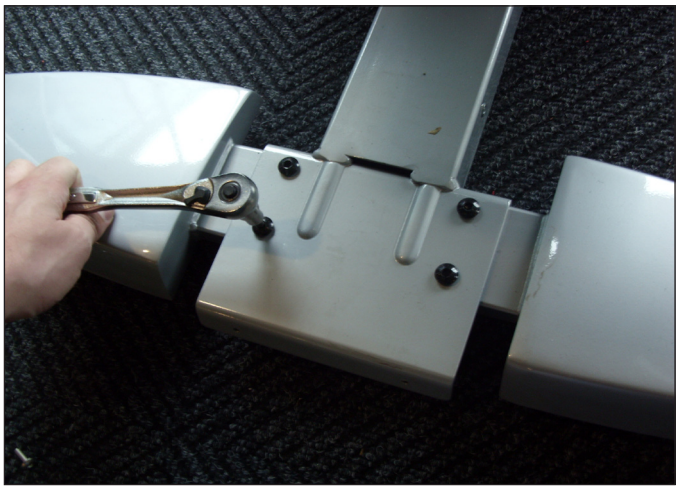


FIGURE A

FIGURE B

7.11 SHROUDS REMOVAL

1) Remove the 10 screws holding the right side shroud to the frame (Figure A).
2) Remove the 10 screws holding the left side shroud to the frame (Figure B).
3) Figure C shows the stepper with both shrouds removed.

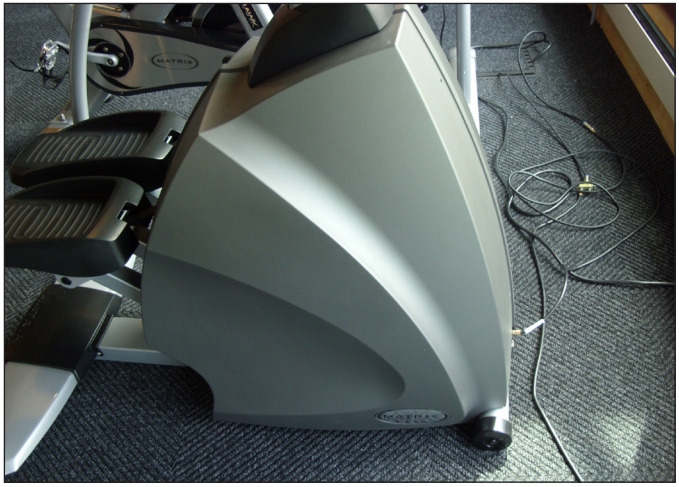


FIGURE A

FIGURE B

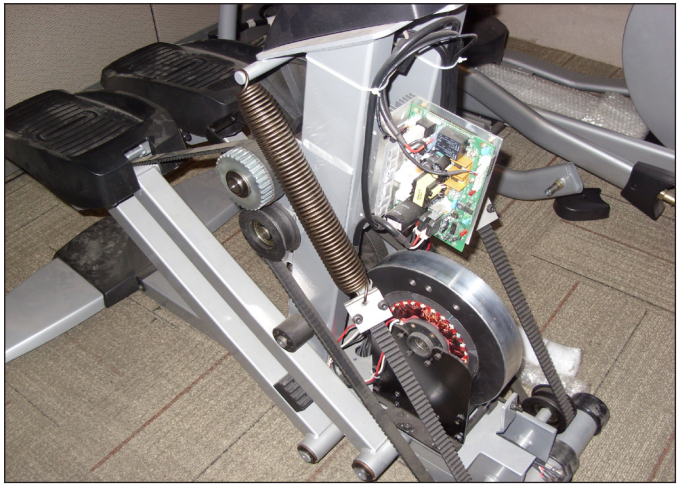


FIGURE C

7.12 LOWER CONTROL BOARD REPLACEMENT

1) Remove the right side shroud as outlined in Section 7.11.
2) Remove the wire connections to the lower board (Figure A).
3) Remove the 2 screws holding the lower board to the frame (Figure B), and remove the lower board.
4) Reverse Steps 1-3 to install a new lower board.
5) Test the stepper for function as outlined in Section 7.22.

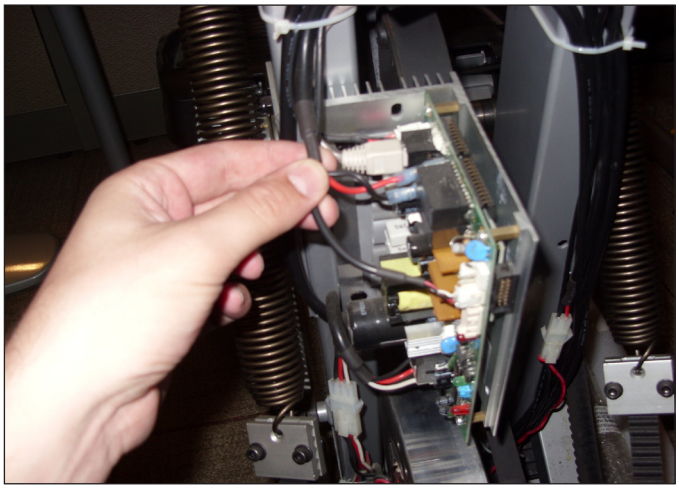


FIGURE A

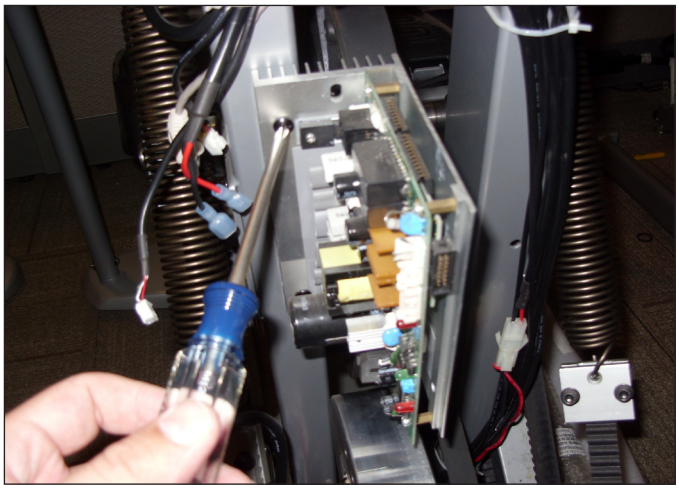


FIGURE B

7.13 GENERATOR BELT REPLACEMENT

1) Remove both shrouds as outlined in Section 7.11.
2) Loosen the 6 screws holding the Generator to the frame (Figure A).
3) Loosen the eye bolt nut that applies tension to the Generator belt (Figure B) and slide the Generator towards the back of the unit to release the Generator belt tension.
4) Walk the belt off of the Generator pulley (Figure C).
5) Loosen the 2 eye bolts holding the center axle to the frame (Figure D).
6) Lift up on the center axle and walk the belt off of the drive pulley (Figure E).
7) This will allow you to drop the center axle out of the frame and to remove the Generator belt (Figure F).
8) Reverse Steps 1-7 to install a new Generator belt. NOTE: Tighten the replacement Generator belt to 85 ft / lbs.
9) Test the stepper for function as outlined in Section 7.22.

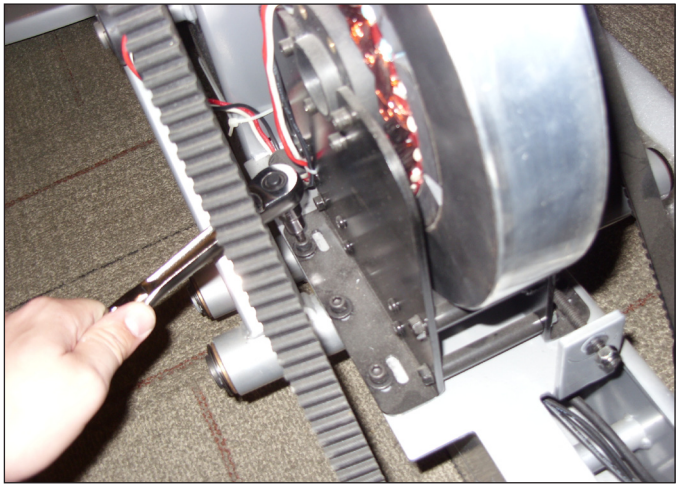


FIGURE A

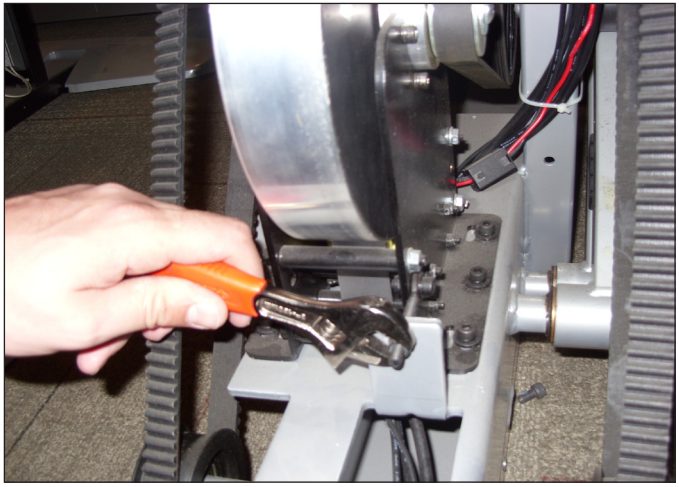


FIGURE B

7.13 GENERATOR BELT REPLACEMENT - CONTINUED

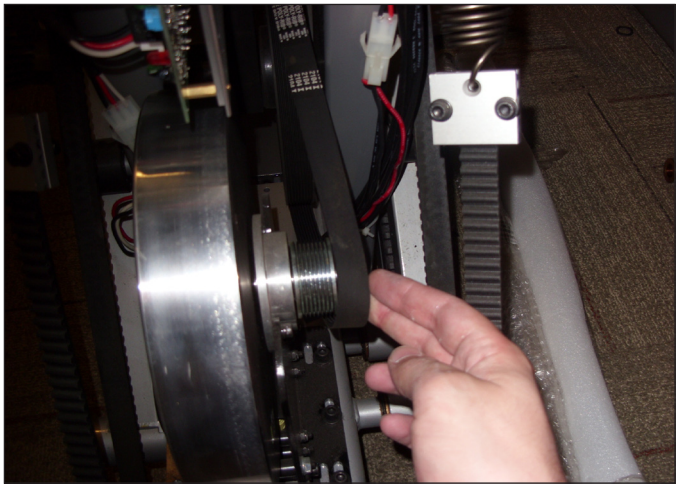


FIGURE C

FIGURE D

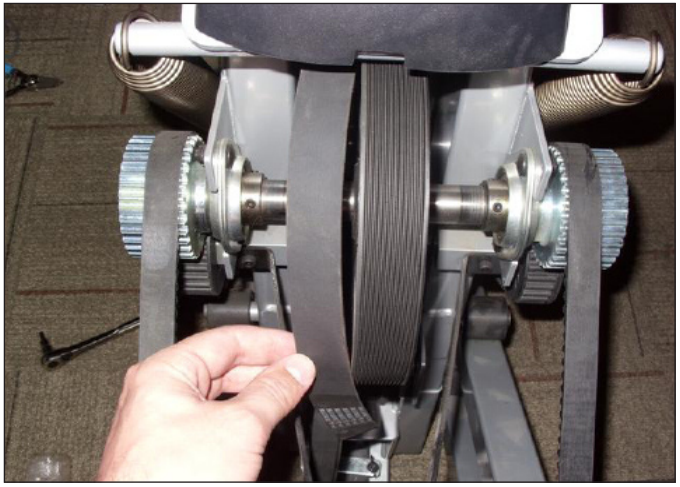


FIGURE E

FIGURE F

7.14 GENERATOR REPLACEMENT

1) Remove the shrouds as outlined in Section 7.11.
2) Remove the 6 screws holding the Generator to the frame (Figure A).
3) Remove the nut from the tension eye bolt (Figure B).
4) Once the nut from the tension eye bolt has been removed, the Generator belt can be walked off the Generator pulley (Figure C).
5) Disconnect the Generator wire harness (Figure D), and remove the Generator.
6) Reverse Steps 1-5 to install a new Generator. NOTE: Be sure to re-tension the Generator belt to 85 ft / lbs. .
7) Test the stepper for function as outlined in Section 7.22.

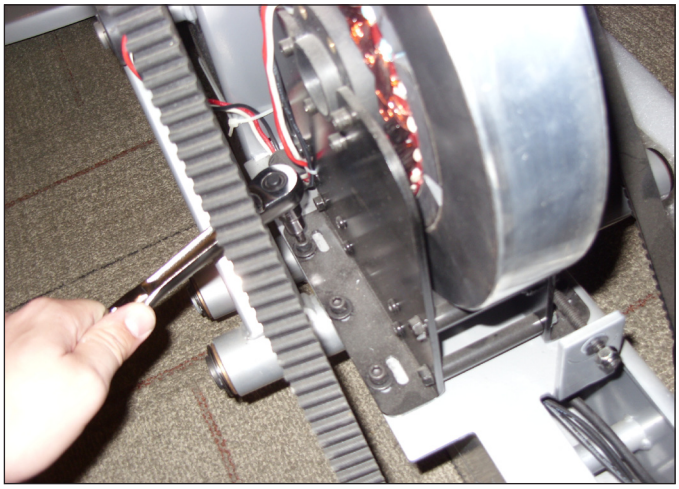


FIGURE A

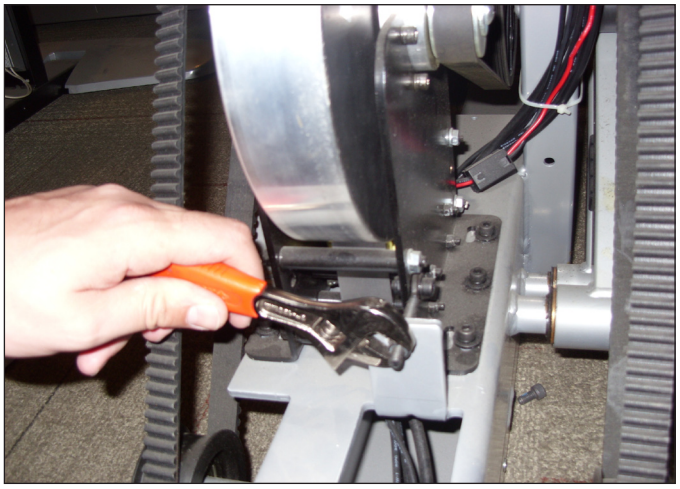


FIGURE B

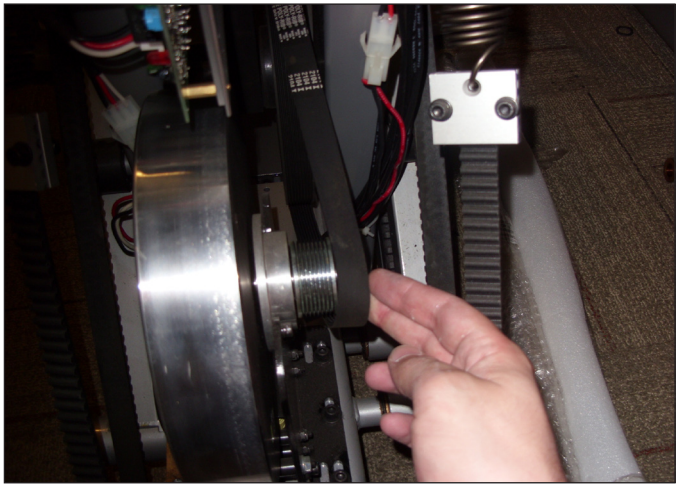


FIGURE C

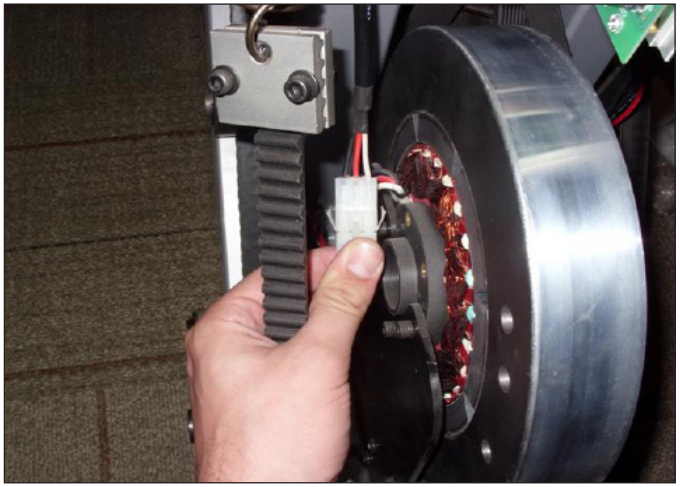


FIGURE D

7.15 CENTER AXLE REPLACEMENT

1) Remove the shrouds as outlined in Section 7.11.
2) Loosen the 6 screws holding the Generator to the frame (Figure A).
3) Loosen the nut from the tension eye bolt (Figure B).
4) Once the nut from the tension eye bolt has been removed, the Generator belt can be walked off the Generator pulley (Figure C).
5) Loosen the 2 eye bolts holding the center axle to the frame (Figure D).
6) Lift up on the center axle and walk the belt off of the drive pulley (Figure E).
7) This will allow you to drop the center axle out of the frame and to remove the Generator belt and center axle (Figures F).
8) Test the stepper for function as outlined in Section 7.22.

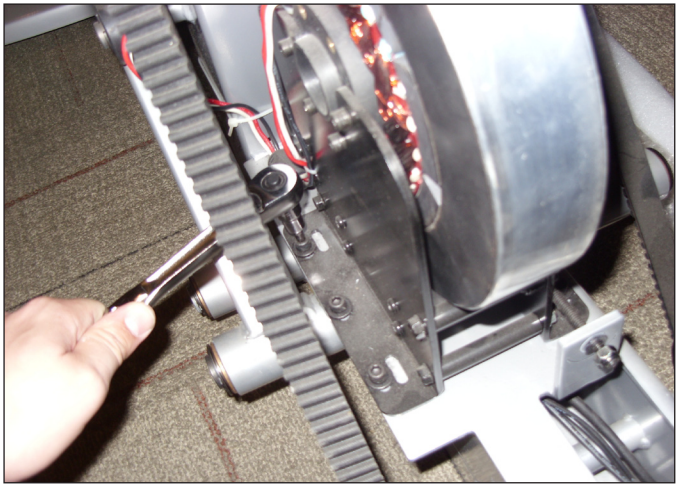


FIGURE A

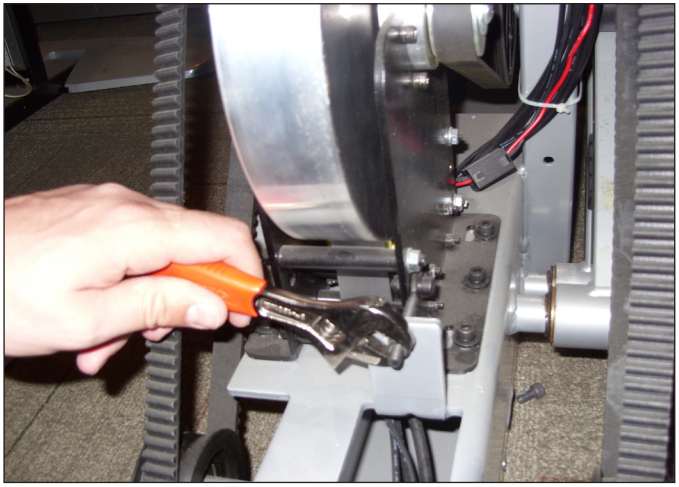


FIGURE B

7.15 CENTER AXLE REPLACEMENT - CONTINUED

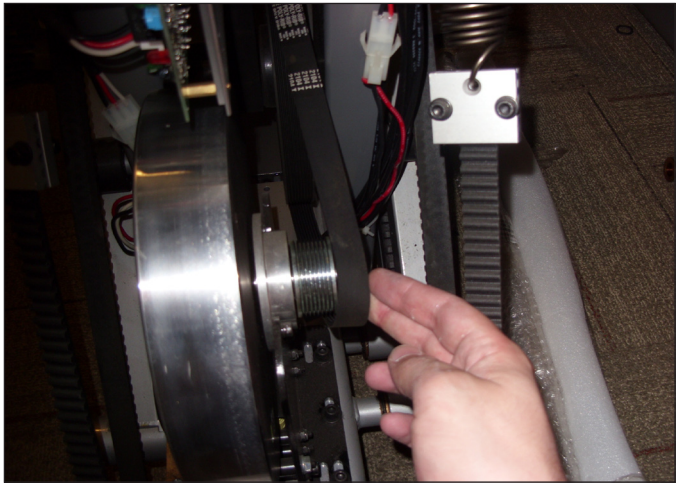


FIGURE C

FIGURE D

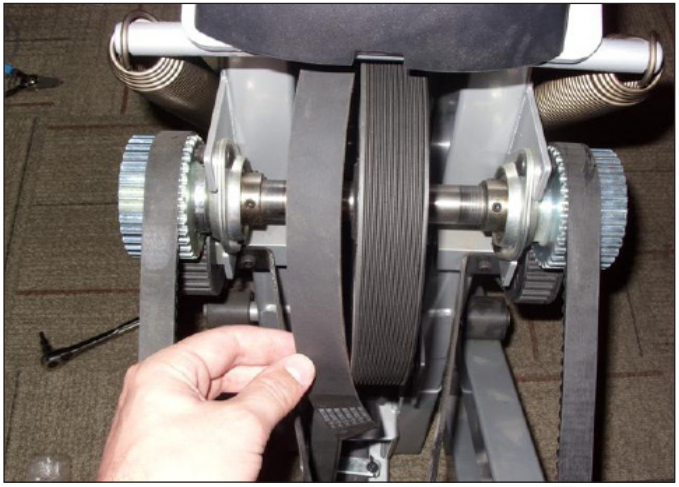


FIGURE E

FIGURE F

7.16 DRIVE BELT REPLACEMENT

1) Remove the shrouds as outlined in Section 7.11.
2) Loosen the 6 screws holding the Generator to the frame (Figure A).
3) Loosen the nut from the tension eye bolt (Figure B).
4) Once the nut from the tension eye bolt has been loosened, the Generator belt can be walked off the Generator pulley (Figure C).
5) Loosen the 2 eye bolts holding the center axle to the frame (Figure D).
6) Lift up on the center axle and walk the belt off of the drive pulley (Figure E).
7) This will allow you to drop the center axle out of the frame and to remove the drive belt from around it (Figures F).
8) Disconnect the 2 pedal belt springs from the around the drive axle set (Figure G).
9) Remove the 2 screws on each side holding the drive axle set to the frame (Figure H).
10) This will allow you to remove the drive axle set and drive belt.
11) Reverse Steps 1-10 to install a new drive belt. NOTE: Tighten the new drive belt to 145 ft / lbs.
12) Test the stepper for function as outlined in Section 7.22.

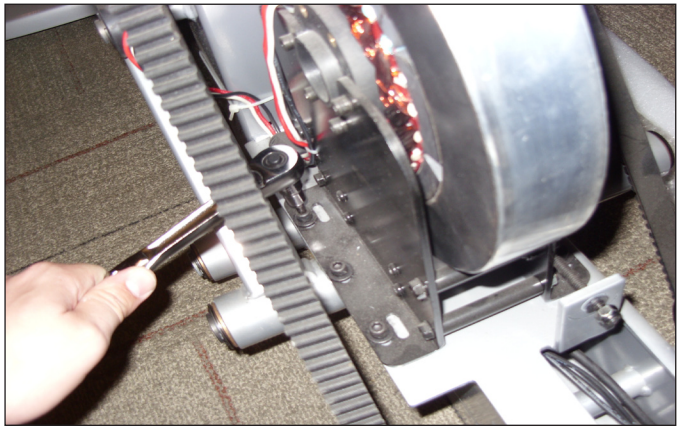


FIGURE A

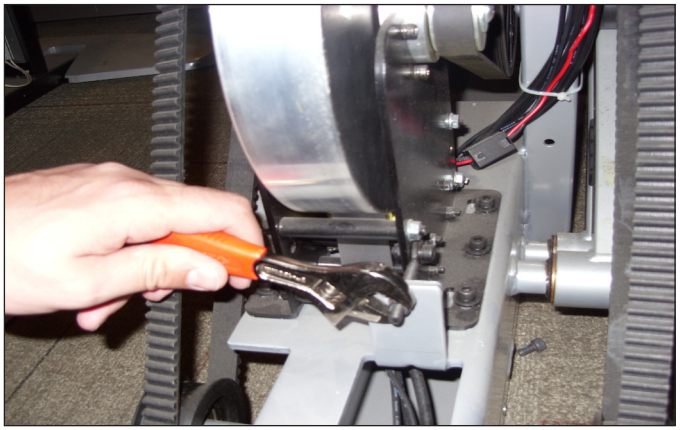


FIGURE B

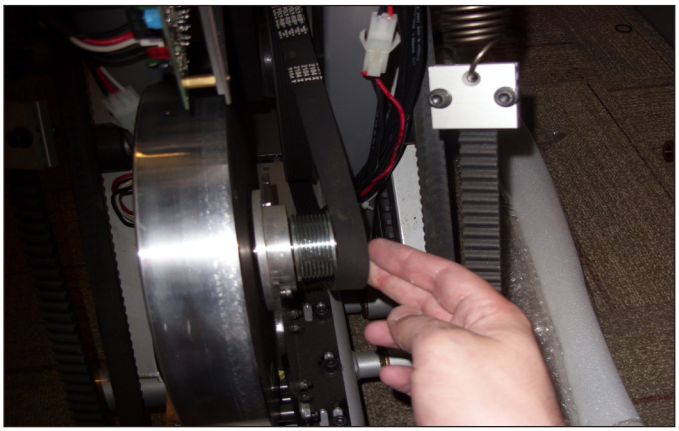


FIGURE C

FIGURE D

7.16 DRIVE BELT REPLACEMENT - CONTINUED

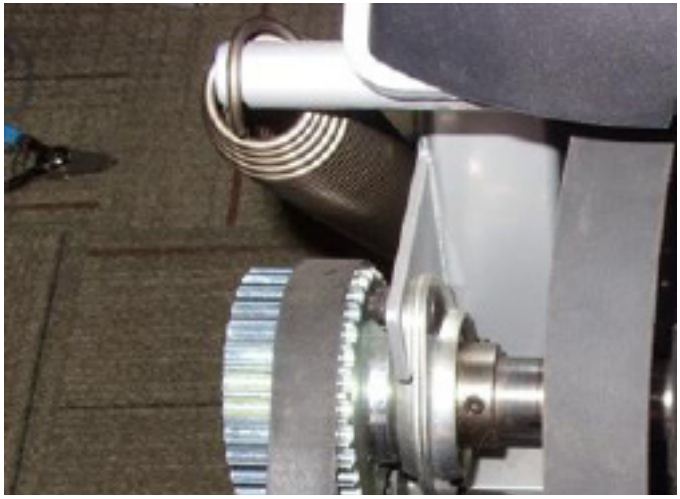


FIGURE E

FIGURE F

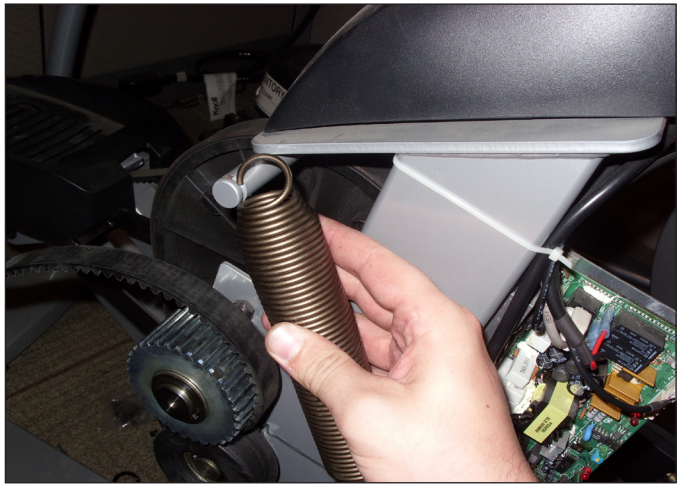


FIGURE G

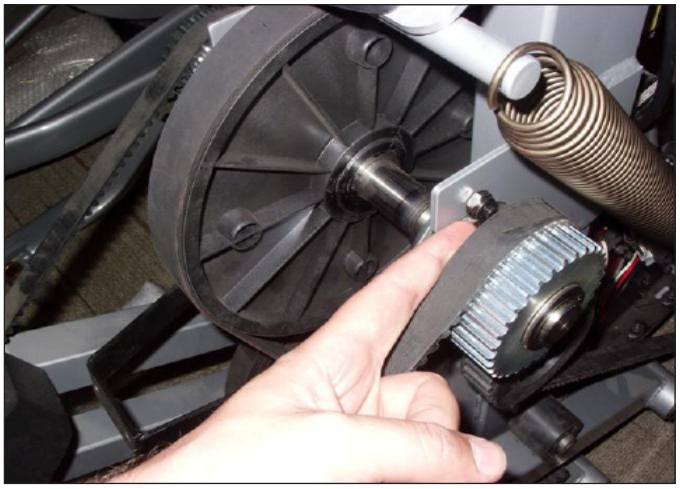


FIGURE H

7.17 DRIVE AXLE SET REPLACEMENT

1) Remove the shrouds as outlined in Section 7.11.
2) Loosen the 6 screws holding the Generator to the frame (Figure A).
3) Loosen the nut from the tension eye bolt (Figure B).
4) Once the nut from the tension eye bolt has been loosened, the Generator belt can be walked off the Generator pulley (Figure C).
5) Loosen the 2 eye bolts holding the center axle to the frame (Figure D).
6) Lift up on the center axle and walk the belt off of the drive pulley (Figure E).
7) This will allow you to drop the center axle out of the frame and to remove the drive belt from around it (Figure F).
8) Disconnect the 2 pedal belt springs from the around the drive axle set (Figure G).
9) Remove the 2 screws on each side holding the drive axle set to the frame (Figure H).
10) This will allow you to remove the drive axle set and drive belt.
11) Reverse Steps 1-10 to install a new drive axle set. NOTE: Tighten the new drive belt to 145 ft / lbs.
12) Test the stepper for function as outlined in Section 7.22.

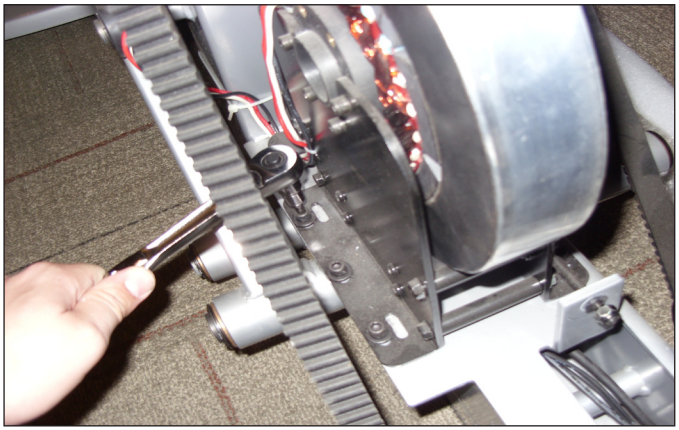


FIGURE A

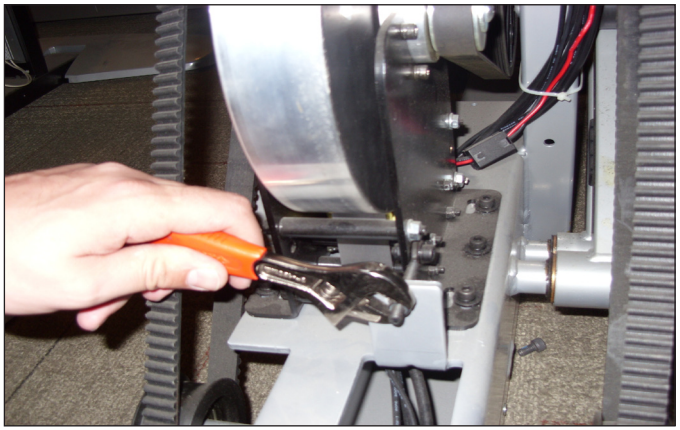


FIGURE B

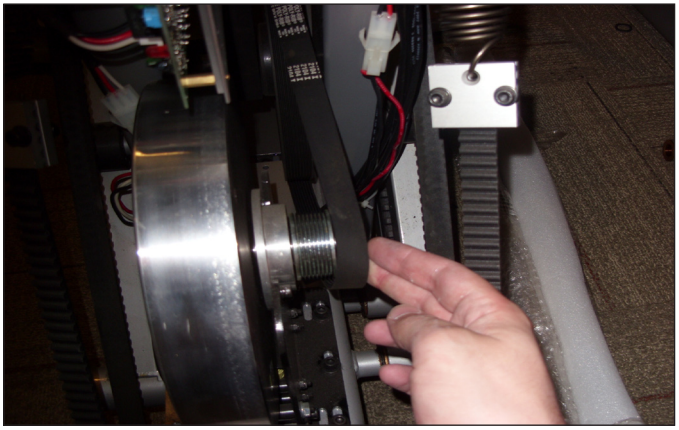


FIGURE C

FIGURE D

7.17 DRIVE AXLE SET REPLACEMENT - CONTINUED

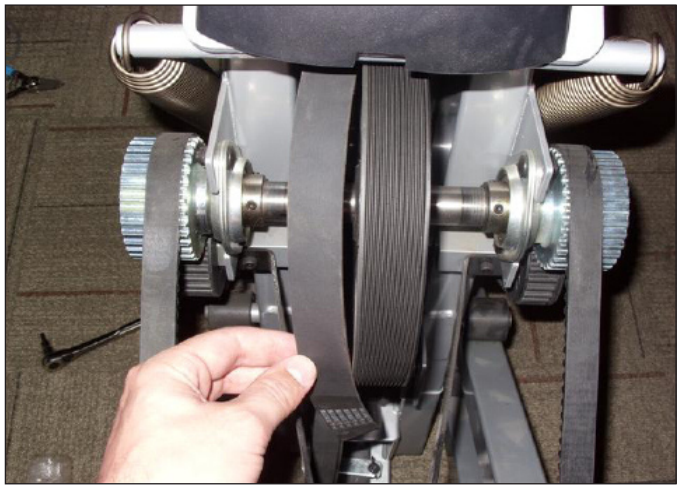


FIGURE E

FIGURE F

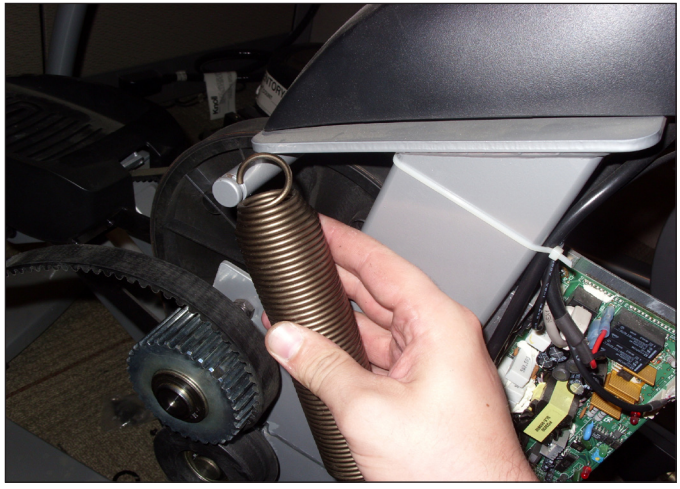


FIGURE G

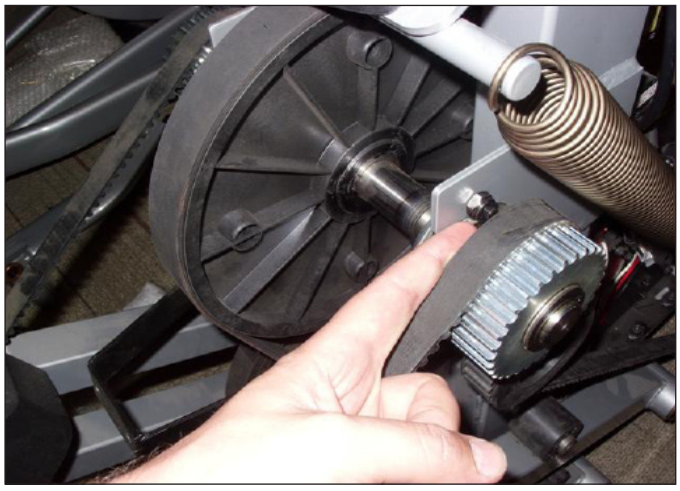


FIGURE H

7.18 PEDAL REPLACEMENT

1) Remove the shrouds as outlined in Section 7.11.
2) Remove the 4 screws under the pedal frame going up into the plastic (Figures A & B).
3) This will allow you to remove the pedal (Figure C).
4) Reverse Steps 1-3 to install a new pedal.

FIGURE A

FIGURE B

FIGURE C

7.19 PEDAL BELT REPLACEMENT

1) Remove the shrouds as outlined in Section 7.11.
2) Disconnect the pedal belt beneath the pedal frame by removing the 2 screws on the pedal re-tension bracket (Figure A).
3) This will allow you to remove the belt from the pedal frame (Figure B).
4) Disconnect the pedal belt spring from the drive axle set, and remove the pedal belt (Figure C).
5) Reverse Steps 1-4 to install a new pedal belt. NOTE: When reinstalling a new pedal belt, it is easier to attach the belt beneath the pedal frame, then attach the pedal belt spring to the drive axle set.
6) Test the stepper for function as outlined in Section 7.22.

FIGURE A

FIGURE B

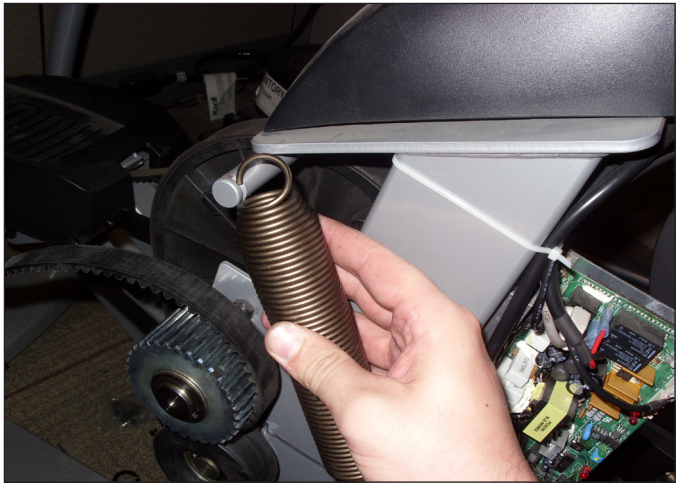


FIGURE C

7.20 PEDAL ARM REPLACEMENT

1) Remove the shrouds as outlined in Section 7.11.
2) Remove the pedal as outlined in Section 7.18.
3) Disconnect the pedal belt beneath the pedal frame by removing the 2 screws on the pedal re-tension bracket (Figure A).
4) This will allow you to remove the belt from the pedal frame (Figure B).
5) Remove the snap ring holding the pedal arm to the frame (Figure C).
6) Remove the pedal arm (Figure D).
7) Reverse Steps 1-6 to install a new pedal arm.
8) Test the stepper for function as outlined in Section 7.22.

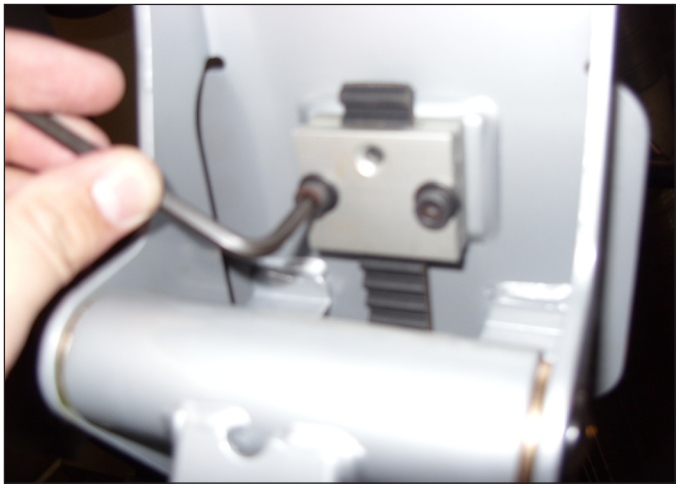


FIGURE A

FIGURE B

FIGURE C

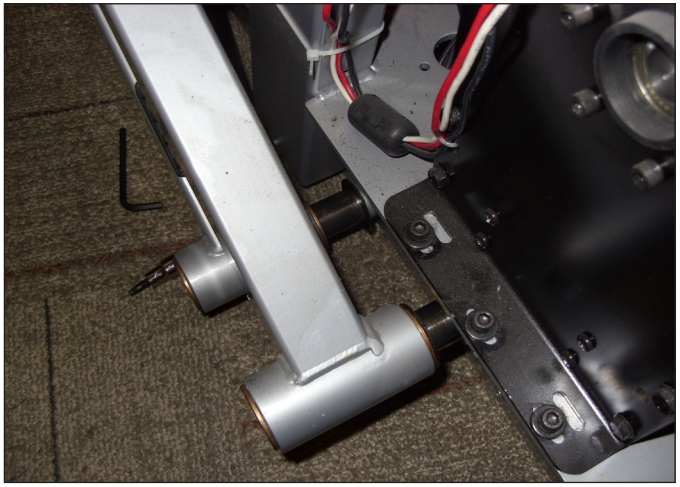


FIGURE D

7.21 BATTERY REPLACEMENT

1) Remove the shrouds as outlined in Section 7.11.
2) Disconnect the 2 wires going to the battery (Figure A).
3) Remove the 2 wing nuts holding the battery to the frame (Figure B) and remove the battery.
4) Reverse Steps 1-3 to install a new battery.
5) Test the stepper for function as outlined in Section 7.22.

FIGURE A

FIGURE B

7.22 TESTING THE STEPPER

ONCE THE UNIT OR REPLACEMENT PART IS FULLY INSTALLED AND ASSEMBLED AND PROPERLY PLACED ON THE FLOOR, USE THE FOLLOWING INSTRUCTIONS TO TEST THE MACHINE:

1) Without hitting start or entering any program modes, step on the pedals and hold the handlebars while stepping to simulate exercising. While moving, listen for any odd noises or squeaks.

2) After stopping movement, press the GO button and begin stepping.

3) Grasp the hand grips to check for proper heart rate response.

4) Press the level up and down buttons on the console and hand grips to make sure resistance is fully functional.

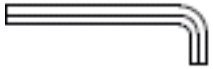
5) If everything functions properly, stop stepping (or press STOP) and the unit will reset to normal operation within 30 seconds.

CHAPTER 8: STEPPER SPECIFICATIONS AND ASSEMBLY GUIDE

8.1 STEPPER SPECIFICATIONS

SPECIFICATIONS	
Display Type	Dot-Matrix LED
Programs	Manual, Rolling, Intervals, Fat Burn, Random, Target Heart Rate, Constant Watts, Fitness Test
Coaxial Cable Connection	Yes
AC TV Power Connection	Yes
Monitor Mount	Yes
Resistance Technology	Generator
Power Requirements	120 V / 220 V
Dimensions (L x W x H)	45" x 31" x 68" / 114 x 79 x 172.7 cm
Product Weight	236 lbs / 107 kg
Max User Weight	400 lbs / 181 kg
SPECIAL FEATURES	
Step Range	12.2"
Contact & Telemetric Heart Rate	Yes
Ultra Non-slip Pedals	Yes
Q Factor	3.3"
Handlebar Design	Ergonomically designed handrails and horn
Thumb Switch Controls	Yes

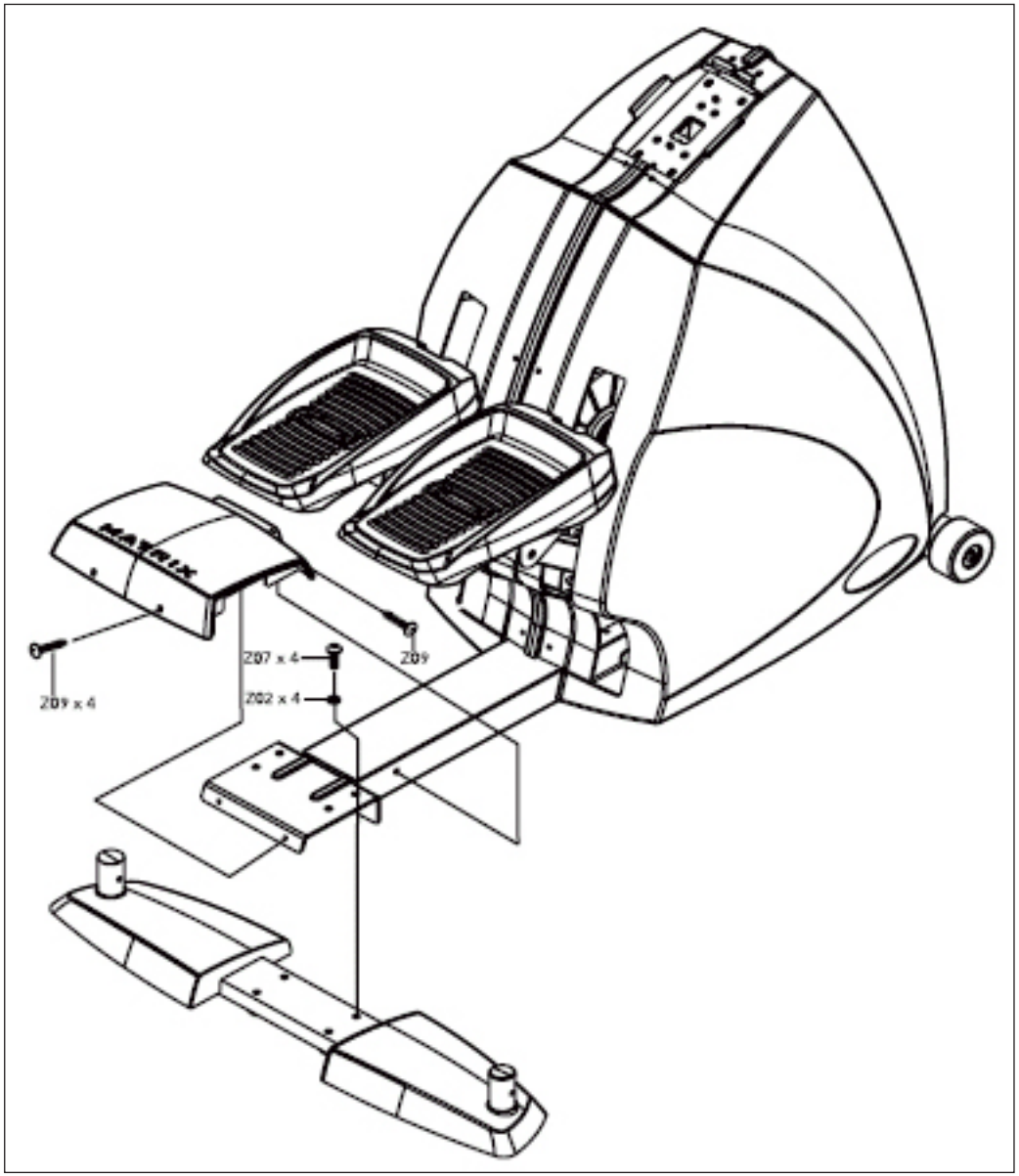
8.2 FASTENERS AND ASSEMBLY TOOLS

QUANTITY	PART #	SKETCH	DESCRIPTION	PACKAGE COLOR
1	Z52		5MM ALLEN WRENCH	PURPLE
1	Z53		6 MM ALLEN WRENCH	PURPLE
1	Z50		#2 PHILLIPS SCREWDRIVER	PURPLE
8	Z01		SOCKET HEAD SCREW (M8 X 16L)	YELLOW
17	Z02		LOCK WASHER	YELLOW, GREEN, BLACK
2	Z03		BUTTON HEAD SCREW SET	GREEN
7	Z05		BUTTON HEAD SCREW (M8 X 16L)	GREEN
8	Z06		ARC WASHER	GREEN
4	Z07		BUTTON HEAD SCREW (M8 X 40L)	BLACK
4	Z09		PHILLIPS HEAD SCREW (M5 X 15L)	RED
2	Z10		BUTTON HEAD SCREW (M8 X 45L)	GREEN
2	Z11		SOCKET HEAD SCREW (M8 X 25L)	YELLOW

8.3 ASSEMBLY INSTRUCTIONS

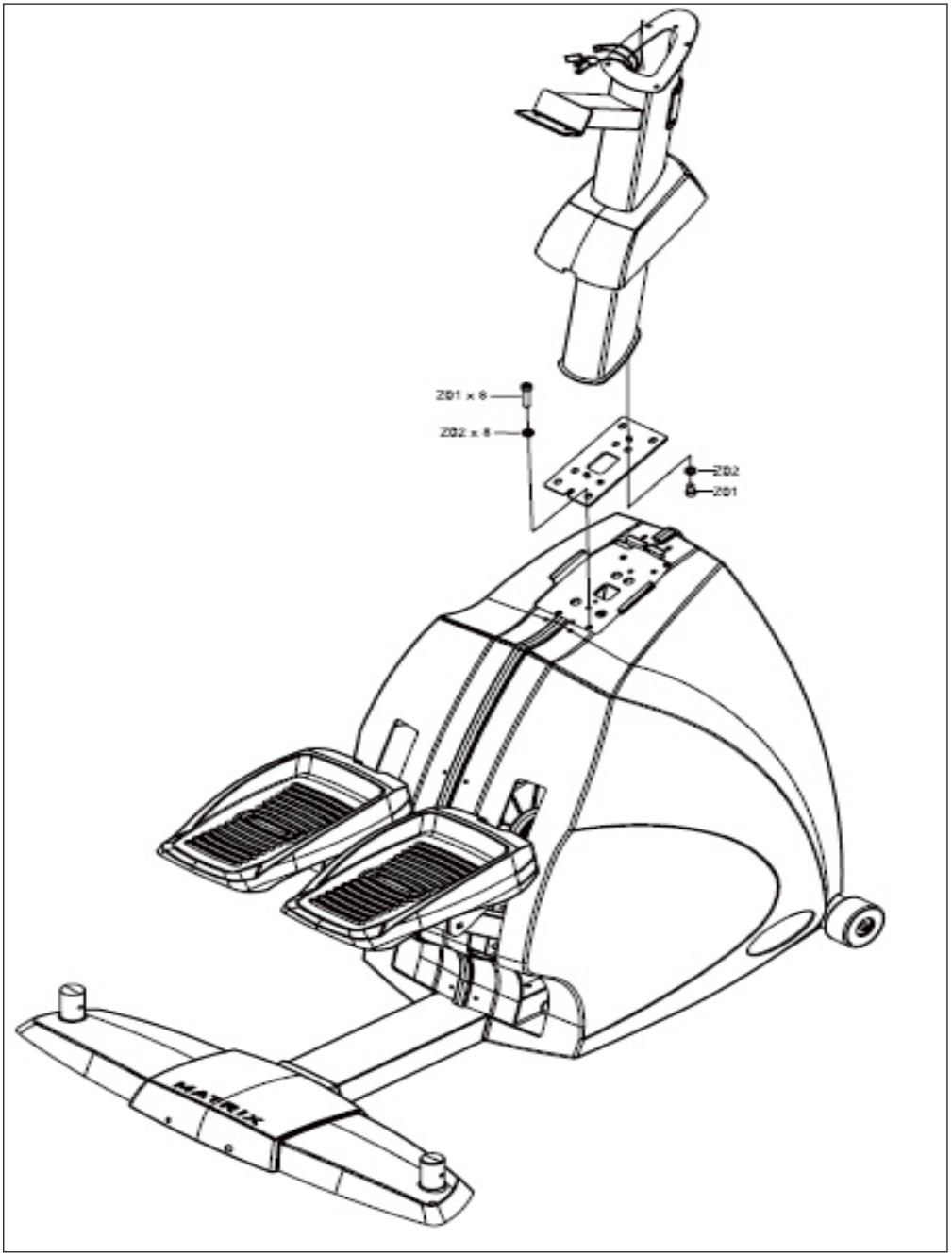
AFTER THESE ASSEMBLY STEPS ARE COMPLETE, BE SURE TO SETUP AND TEST THE UNIT AS OUTLINED IN SECTION 7.22.

STEP 1



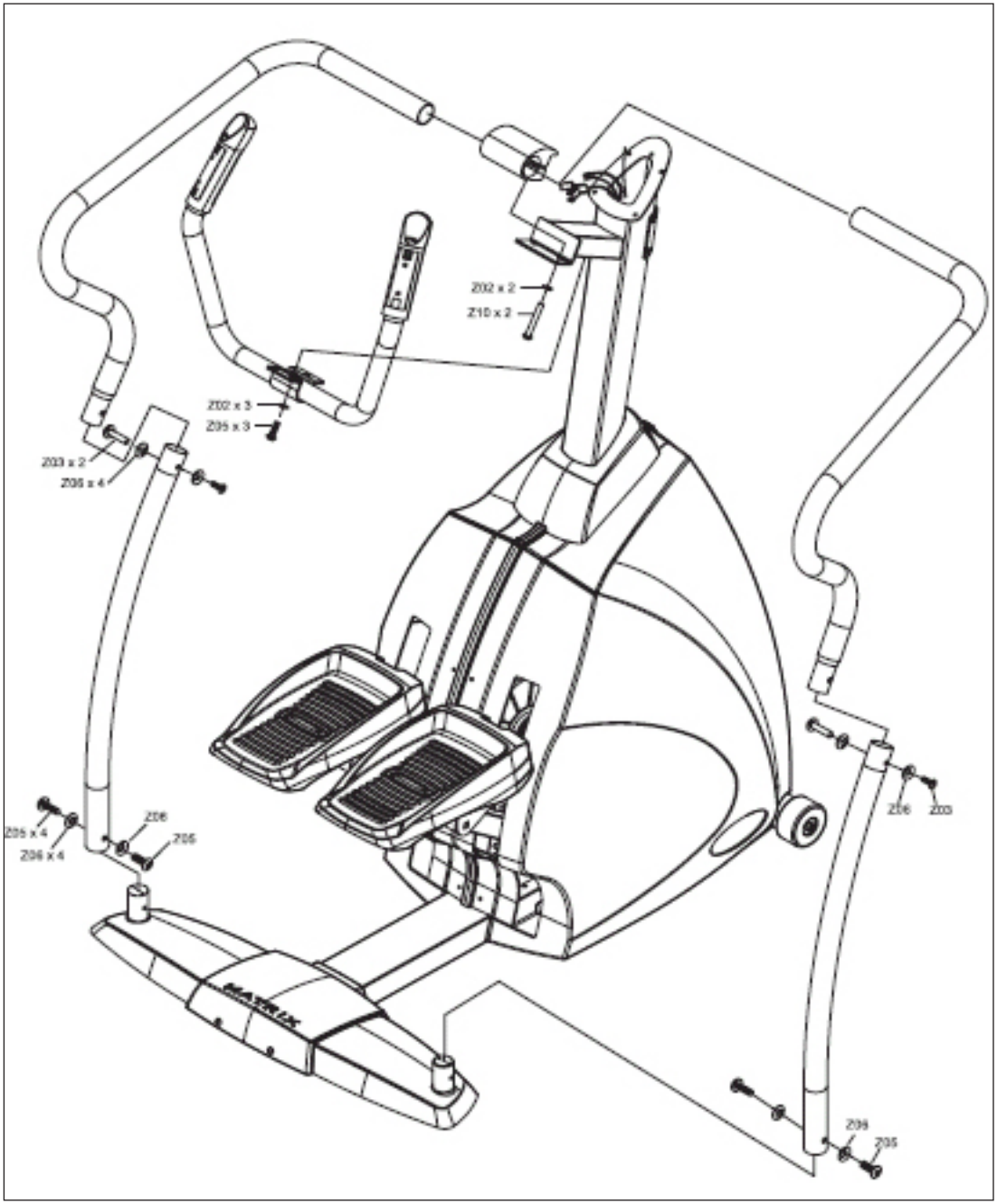
8.3 ASSEMBLY INSTRUCTIONS - CONTINUED

STEP 2



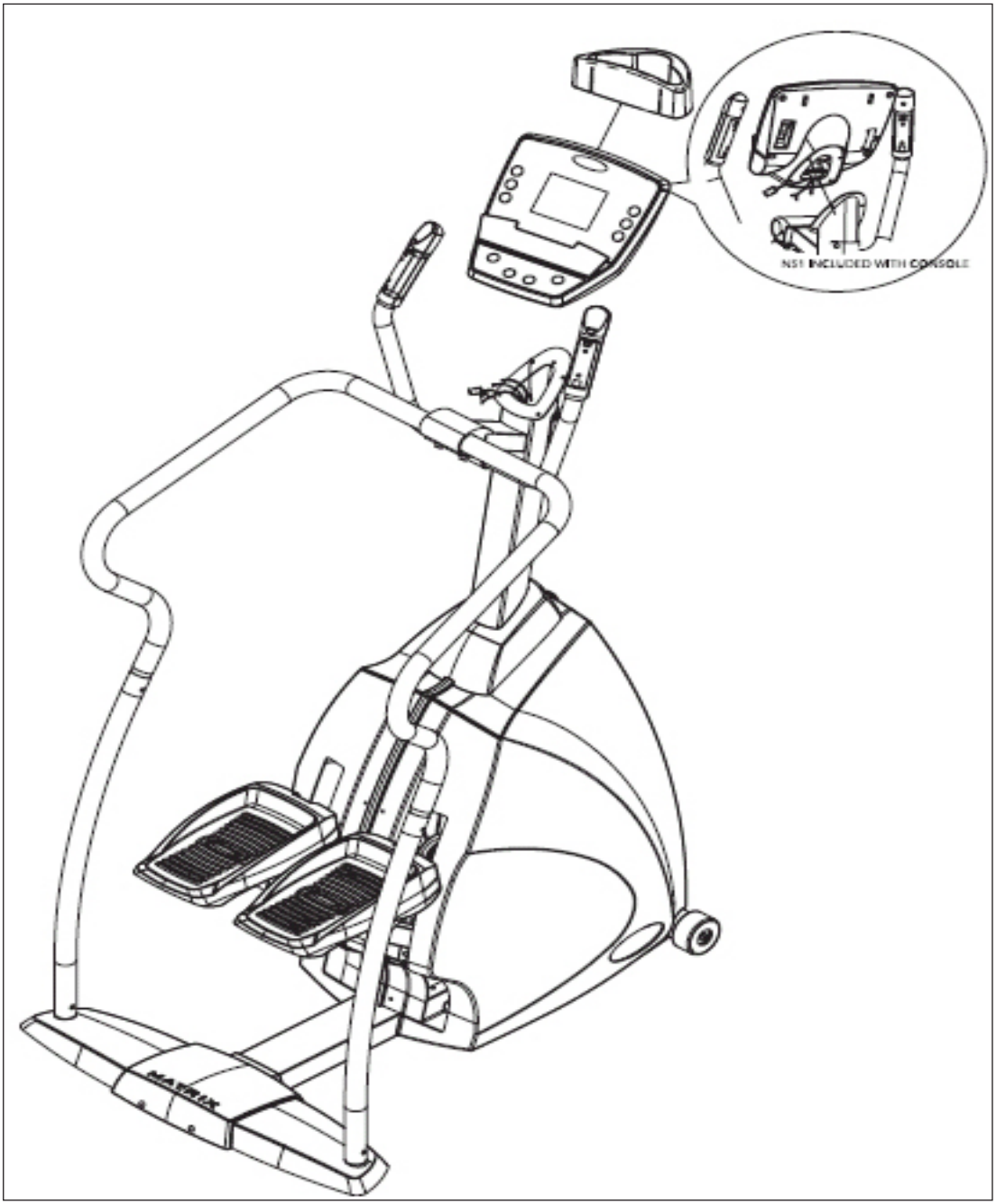
8.3 ASSEMBLY INSTRUCTIONS - CONTINUED

STEP 3

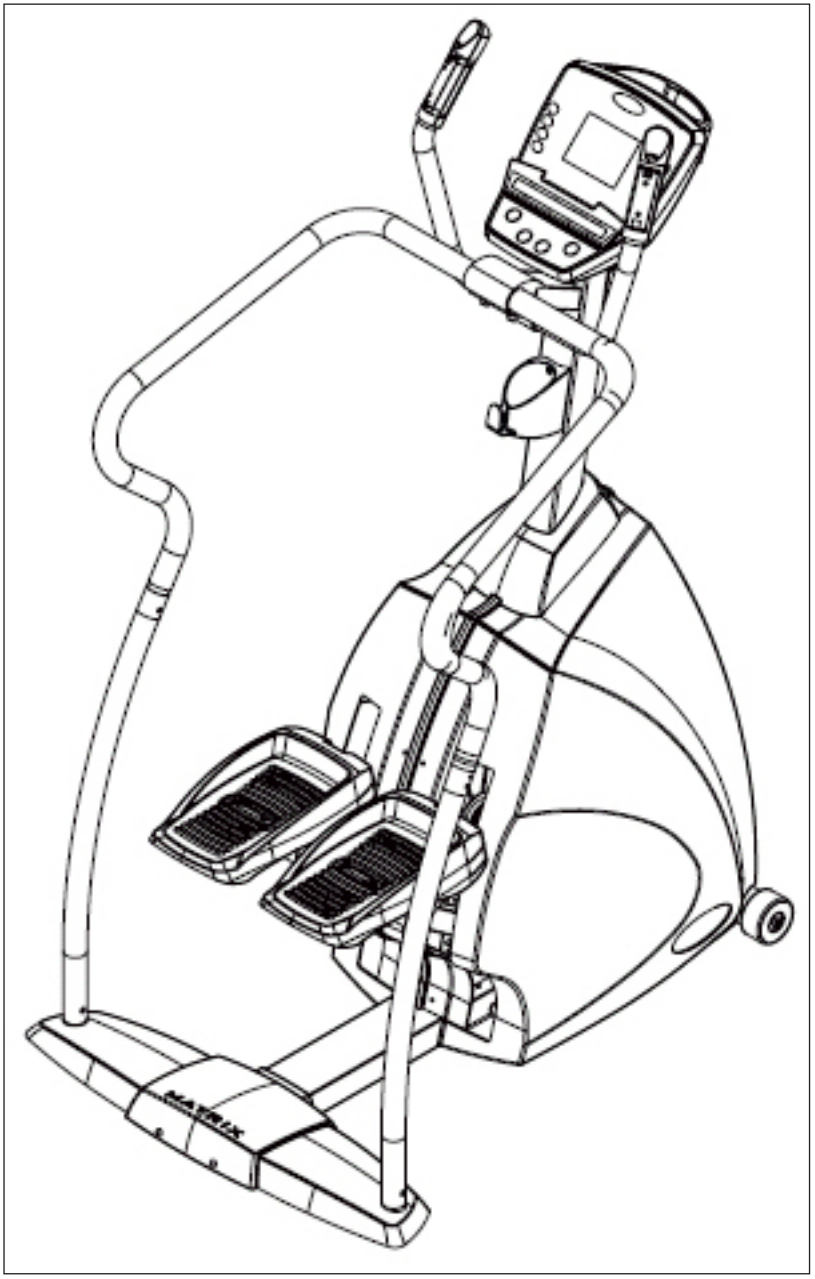


8.3 ASSEMBLY INSTRUCTIONS - CONTINUED

STEP 4



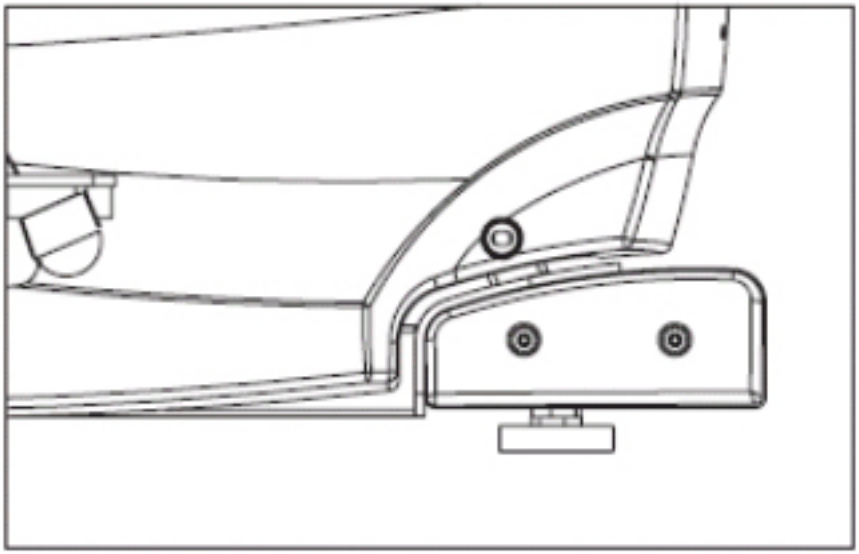
FINAL ASSEMBLY



8.4 LEVELING THE STEPPER

STABILIZING THE MATRIX STEPPER

After positioning the stepper in its intended location, check its stability by attempting to shake it side to side. Shaking or wobbling indicates that your stepper needs to be leveled. Determine which leveler is not resting completely on the floor. Loosen the nut with one hand to allow the leveler to rotate. Rotate the left or right leveler, and repeat the adjustment as necessary until the stepper is stable. Lock the adjustment by tightening the nut against the rear foot support.



8.5 TV BRACKET INSTALLATION

1) Remove the bracket, hardware, and TV from their boxes.
2) Pound the spring pin (found in the hardware bag) into the small hole in the TV bracket (Figure A). This is much easier to do before the bracket is installed on the stepper.
3) Remove the Matrix Logo plate from the front of the console mast (Figure B).
4) Pull the coax and TV power wires through the hole in the front of the console mast. NOTE: You may need to remove the console to get these wires fished through the hole in the front of the console mast.
5) Attach the coax and TV power wires to the wiring running inside of the TV bracket (Figure C). You will need to use the male to male coax connector shipped in the hardware bag (Figure D).
6) Attach the TV bracket to the console mast using the 4 screws removed in Step 3 (Figure E).
7) Attach both of the long metal pieces (called rabbit ears) to the TV bracket using the long screw and nut found in the hardware bag (Figure F). The user's right side rabbit ear should be installed so that the spring pin lines up with a hole in the rabbit ear to limit the angle of adjustment of the TV (Figure G).
8) Attach the TV to the rabbit ears using 4 screws from the hardware bag (Figure H).
9) Attach the TV controller bracket to the front of the console. The TV controller bracket will mount using the 2 bottom screws holding the console to the console mast (Figure I).
10) Attach the TV controller to the TV controller bracket (Figure J).
11) Connect the TV power wire (Figure K), coax cable signal wire (Figure L), and controller wire (Figure M) to the back of the TV. NOTE: The controller wire will have a tag on both ends, one labeled controller, the other TV.
12) Connect the controller wire to the back of the TV controller (Figure N).
13) Install the cover onto the back of the TV (Figure O). NOTE: There is an extra cover shipped with the TV.
13) Run a coax cable to the base of the stepper and plug it into the entertainment port (Figure P).
14) Plug in the TV power adaptor to a wall plug and into the entertainment port at the base of the stepper (Figure Q).
15) Use the remote control sent with the TV to perform a channel search to program the TV (Figure R).
16) To perform a channel search, hit MENU, the right arrow once, hit the down arrow to Auto CH Search, and then ENTER. The TV will automatically search for both Analog and Digital channels.

FIGURE A

FIGURE B

8.5 TV BRACKET INSTALLATION - CONTINUED

FIGURE C

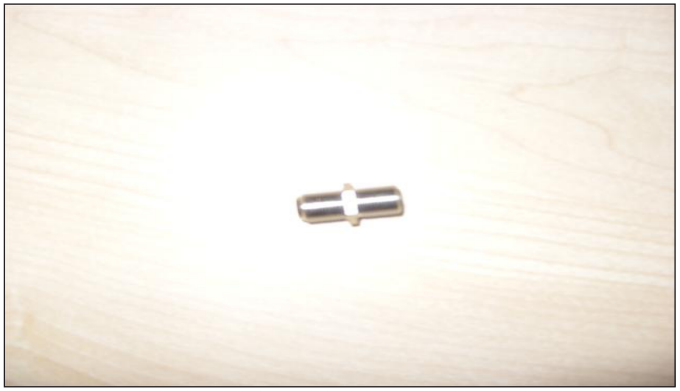


FIGURE D

FIGURE E

FIGURE F

FIGURE G

FIGURE H

8.5 TV BRACKET INSTALLATION - CONTINUED

FIGURE I

FIGURE J

FIGURE K

FIGURE L

FIGURE M

FIGURE N

8.5 TV BRACKET INSTALLATION - CONTINUED

FIGURE O

FIGURE P

FIGURE Q

FIGURE R

NOTES

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